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GRAEFENBERG:

OR,

A TRUE REPORT

OF

THE WATER CURE,

WITH

AN ACCOUNT OF ITS ANTIQUITY.

BY

ROBERT HAY GRAHAM, M.D.

Nunc agilis fio, et mensor *salubribus* undis.

HOR.

LONDON:

LONGMAN, BROWN, GREEN, AND LONGMANS.

1844.

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TO

CAPTAIN JAMES WOLFF,

SEVENTH REGIMENT OF THE LINE, KLAGENFURT, AUSTRIA.

MY DEAR CAPTAIN WOLFF,

It is to you that I am indebted for the most valuable part of the information I obtained on the Water Treatment at Graefenberg. To you also am I indebted for a more than brotherly kindness and attention, whilst laid on a bed of sickness. Accept, therefore, in return, this public testimony to your private worth; as an offering of that gratitude which is so largely due from

Your ever obedient and affectionate Friend,

R. H. GRAHAM.

47, GREAT PORTLAND STREET, LONDON.

13th June, 1844.

INTRODUCTION.

IN the following account of the “water cure” as practised at Graefenberg, the subject is treated with the strictest impartiality. The danger attending it, is illustrated by cases that terminated fatally, and the benefits derivable from it, are made equally manifest by others that were happily cured.

The “water treatment” is an old English method of curing diseases, and was, early in the last century, transplanted from this country into Germany, where, having fallen into disuse, it was accidentally revived by Vincent Priessnitz, who now surreptitiously claims the credit of the invention. That it was an old English practice, will be fully borne out by the Appendix to this volume, which contains a mass of more valuable information respecting it than has ever before been collected.

The facts I have stated, and the observations I have made, having been somewhat hastily thrown together, will, I trust, be accepted in excuse for the want of method and of style. The former may be relied on

as correct, whilst the latter will, of course, be subject to the criticism of the reader. The main object has been to place that which is excellent in itself upon a solid foundation,—to rescue it from the hands of ignorant pretenders,—to prevent it from falling into the disrepute and oblivion which it has been doomed, more than once, to suffer, and, at the same time, to point out, not only the practicability, but the great advantage, of combining it, more or less, with other remedial means. The cases contained in the Appendix, and said to have been treated by Vander Heyden, Floyer, Baynard, Hancock, Hahn, Currie, and others, simply and successfully by cold water, cannot fail to excite a lively interest, and are such, that even the medical reader may derive from them much useful information; whilst those mentioned by myself, as having terminated unsuccessfully at Graefenberg, may be considered rather as beacons to steer by, than as shoals to deter us from our course.

The public are much indebted to Mr. Claridge for introducing this remedy to their notice. Having before his eyes the uncertainty of the medical art, his object has been to benefit mankind, by what appeared to him a more certain, as well as a more simple, mode of curing disease. As “charity covereth a multitude of sins,” so let this his good intention cover the numerous errors of

his book,—errors, which may be attributed as well to the enthusiasm called forth on the occasion, as to his deficiency of knowledge in the physiology of the human frame.

Notwithstanding I visited Graefenberg free from every prejudice, I was, nevertheless, prepared to receive with caution whatever might be related to me, having made up my mind to trust implicitly to the evidence of my own senses; and, in order to become the better acquainted with the method of “cure,” I determined to experience in my own person the effects it produced. The enthusiasm which prevails there, and the marvellous qualities attributed to Priessnitz, can only be accounted for by taking the German character into consideration. Germany is, *par excellence*, the land of fiction and of charlatanism, the country of Mesmer, Hohenlohe, and Hahnemann, where the credulity of the middle ages still exists, and where the mind of man, as to ideality and spiritualism, has scarcely undergone a change from the earliest period down to the present time. Thus, in the days of Tacitus, the Germans had their inspired females, or Pythonesses, whom they consulted as to future events. During the middle ages, they supplied the rest of Europe with Alchemists and Astrologers. From their love of the mysterious, they established the holy Vehmé, or secret inquisitorial tribunal, which flourished for nearly

eight hundred years. A visionary people are they—whose ideas are constantly roaming beyond the regions of nature—spiritualism and abstract ideality pervade their literature, their poetry, and their philosophy, even in our own time! None but a German could ever have written the unintelligible, sublimated metaphysics contained in the “La Morale Transcendentale” of Kant, a work singularly coincident with the name of the author. None but a German could have imagined the character of Mephistophiles—a personification of the abstract principle of evil; or the Demons of the Hartz Mountain. The German, Mesmer, discovered the abstract principle of the soul,—animal magnetism, capable of producing such wondrous effects,—where the soul, the pure intelligent principle, divested of gross matter, acts independently of the body, without the intervention of the senses. None but a German could ever have discovered the abstract principle of medicines—viz. that an infinitesimal dose, smaller, if possible, than an integral particle, possesses much greater healing virtue than the aggregate millions of particles of the same substance, constituting a medium dose. This abstract virtue is communicable, like the aroma of flowers, so as to impregnate an homœopathic mass; and thus the medicinal property may be disseminated *ad infinitum*, and the more it is subdivided and elaborated, the more intense and con-

centrated will it become, and the more certain and expeditious in its effects. Nor is this all;—the same German mind discovered the fallacy of the old Hippocratic maxim, “*contraria contrariis curantur*,” which implies an antipathy between the remedy and the disease; whereas now we have it that the medicine coalesces by sympathy with the disease—“*similia similibus curantur* ;” and as “like begets like,” so does the same medicine, which cures a disease in a sick body, generate a similar disease in a healthy one;—thus, an homœopathic dose of quinine cures an intermittent fever in the one case, and produces it in the other.

The same propensity to the mysterious may be recognised in the notable miracles of Prince Hohenlohe. This Prelate composed suitable forms of prayer for patients variously affected, and, giving directions as to the day, the hour, and the precise minute when they were to be offered up, he simultaneously repeated the same prayers. This proceeding, by sympathy also, produced the desired effect, “though the petitioners were often some hundreds of leagues apart,” verifying the sacred proverb, “Thy faith hath made thee whole.” The Austrian Government judiciously prohibited the performance of any more of these pretended miracles, lest the sacred office of the Bishop should be scandalized and religion brought into contempt.

Every medical practitioner knows well enough the powers of the imagination,—the influence which the mind exerts over the body,—its frequent salutary effects, in cases of sickness, and its equally frequent baneful effects, even to the extinction of life itself. Some years ago, Locatelli, of Milan, related to me the following anecdote :—“ A peasant once came to consult me,” said he, “ on a case of obstinate constipation, which had lasted for about three weeks. I wrote him *a prescription*, and directed him to take it fasting. About two months afterwards the man came again to consult me for the same complaint. ‘ Well, my good fellow !’ said I, ‘ how did *the prescription* operate ?’ ‘ Very well, indeed, sir,’ replied the man ; ‘ it purged me greatly, and I remained quite well for upwards of a month,—now I am come for another.’ ‘ Then take it again,’ rejoined I. ‘ How can I ?’ said the man ; ‘ I did as you told me ; I took it when I got home, and it passed through me, as you said it would.’ ” Thus, the man had actually taken the *prescription* itself, and believed that the abbreviated words, written in an unknown tongue, terminating with the cabalistic figures of ounces, drachms, and scruples, had constituted a charm,—an invocation to some saint to purge him,—imagination did the rest. Anecdotes of this sort, illustrative of the influence of the mind over the body, might be collected sufficient to fill volumes.

In short, it is to this, and this alone, that all the effects of animal magnetism, metallic tractors, and homœopathic remedies, are to be attributed.

The sympathetic prayers of Prince Hohenlohe remind me of another German method of curing diseases. The sick man, in this case, procured a proxy, who was bled, blistered, physicked, and dieted, whilst he, in the interim, ate and drank whatever he chose. The reader may find an amusing anecdote of this kind related by the justly celebrated Ambrose Parey, the father of modern surgery; it failed, however, in its result. The sympathetic cure of wounds was much more successful, and led to one of our greatest improvements in surgery—viz. the healing by first intention. In this case, the wound was bound up in its own blood, whilst the instrument, which had inflicted it, was three times a-day carefully washed, anointed, wrapt up, and laid in bed. After the lapse of seven, fourteen, or twenty-one days, as the case might require, the bandage was removed, when, to the amazement of the beholders, the wound was found to be *miraculously* healed.

I have been led into these observations on the enthusiastic and visionary character of the Germans, with a view to explain the reason why, notwithstanding his numerous failures, Priessnitz has acquired the appellation of “Nature’s favoured Physician,” before whom

Galen, Hippocrates, and Esculapius himself dwindle into insignificance. It is this same enthusiasm which has invested him with a "superhuman sagacity" in the art of healing, together with the faculty of "seeing into the human body as if it were made of glass," whilst the charm of novelty has been no less productive in supplying him with patients. How far this illiterate but shrewd peasant of Graefenberg, merits the adulation he receives, will be seen by the perusal of the following pages.

A TRUE REPORT
OF
THE "WATER CURE,"
AS PRACTISED AT GRAEFENBERG.

HAVING read Mr. Claridge's book on the "cold water cure," and occasionally suffering severely from gout, I considered myself exactly the subject to undergo the treatment. From the excellent treatises of Drs. Cheyne, Cadogan, and Mackenzie, on that disease,—from the writings of Vander Heyden, Sir John Floyer, and others, on the salutary virtues of cold water in the treatment of it, I was induced, on the whole, to form a favourable opinion; and, being on the point of placing my son at Dresden, for his education, I determined to avail myself of the opportunity thus afforded me of proceeding to Graefenberg.

With this view, I pursued my route from Dresden to the mountains of Silesia, and, on approaching Breslau, met with another Englishman, a Mr. H—, who was bound to the same place. This gentleman laboured under a nervous disease, complicated with a cutaneous affection. His ideas centered wholly in himself; his complaints were his constant theme of conversation, accompanied with much vehemence of gesture, a restless staring of the eyes, and contortion of the muscles of the face. "It appears to me, sir," said I, "that you are labouring under great nervous irritability." "Nervous irritability!" he replied; "God bless me, sir, my medical man tells

me that he never in his life met with such an irritable patient." Truly, thought I, might he say so, unless he is practising in a lunatic asylum

On ascending the hill to Graefenberg, I performed, as is usual, my libations at the fountain dedicated to the "Genius of Cold Water." We arrived about one o'clock, 18th October, 1842, and were immediately introduced to Priessnitz; one of the patients, Captain Wolff, to whom I was afterwards under the deepest obligations, acting as interpreter. He desired me to describe my case; but, observing the extreme impatience of my companion, I yielded precedence to him, which afforded me, at the same time, an opportunity of scrutinizing Priessnitz, whose eyes continually glanced towards me, and were restless under my gaze. The interview lasted only a few minutes. We were then billeted in what is called the "Colony," consisting of two or three cottages. The rooms were about nine feet square, wearing a most forlorn and miserable appearance. At four o'clock Priessnitz paid us a visit, with Frantz, the proprietor of the cottages, who officiated as bath-attendant and servant, accompanied also by a patient, who acted as interpreter. I was ordered to strip, and most unexpectedly enveloped in a cold wet sheet. He then gave some orders to Frantz, without asking me a single question, which, doubtless, was judged unnecessary, as I had previously, in few words, given the history of my case. When all was over, I inquired of my travelling companion what Priessnitz had said to him. "Oh, the great man!" he replied; "he at once knew what was the matter with me. He put his finger upon the place, and said my disease was there. But none had ever found it out before." "Well, sir," said I, "and where is your disease,—where did he put his finger?" "Oh, it's all the stomach,—I knew it was," he replied. This gentleman had a most voracious appetite, was as lean as a greyhound, and as hungry. Two cases could not possibly be more dissimilar than his and mine,

yet, as will hereafter be seen, the treatment of both was precisely the same.

On entering the immense dining-room, soon after our arrival, the *coup d'œil* was of an exceedingly novel description. Four long dining-tables, occupying about two-thirds of the room, were filled with guests. The clatter of knives and forks, with every one eating greedily, and talking loudly, produced a most Babel-like confusion of sounds; all which time a band of music was playing, and, at the upper end of the room, a party of four were engaged at battledoor and shuttlecock. As there was no master of the ceremonies, I was rather at a loss where to seat myself; but at last discovered a vacant place at the lowest end of the lowest table, amongst a party of Russians, Poles, and Hungarians. It greatly surprised me to find so large a proportion of young men; at least two-thirds were under thirty years of age, and many little more than twenty. Upon inquiring about their several complaints, the reply generally was either dyspepsia or hypochondriasis. Some days afterwards, strolling down to the "douche" baths, I met a couple of my dyspeptic or hypochondriacal acquaintance, and, having an opportunity of seeing them unclothed, found they were covered with the scabs and ulcers of secondary syphilis. This induced me to attend regularly at the baths, in order to study the prevailing diseases of Graefenberg, the great majority of which I found to be syphilitic.

On the evening of my arrival, and for several days afterwards, I was beset by these juvenile patients, inquiring if I came "to make the cure," and recounting the numerous "miracles" that Priessnitz had performed. These *gentlemen*, as I afterwards learnt, were much in debt for board and lodging, and were clearing off their score by a system of espionage, acquainting Priessnitz with everything that was going on, and propagating all needful reports. Thus, for instance, on the day that the ill-fated Miss S. S. died, it was immediately reported that she had killed herself, by doing more

than was directed; consequently none but herself was to blame. Thus also, during my own severe illness, it was reported, that I had prescribed for myself, and that Priessnitz did not consider me his patient; consequently, had I died, and a very little more of the "water cure" would have done it, the blame would in like manner have rested only on me. These individuals are further useful in keeping up a degree of enthusiasm amongst the patients, so as to make it perfect heresy for any one to breathe a syllable against the "water cure." Woe to him who does so!—he immediately becomes a marked man, and is generally desired to quit the establishment. That everything is reported to Priessnitz, is so well known, that those, who entertain any doubts respecting his infallibility, must be very careful how they give utterance to them. Of this I received several confidential communications, especially from the French patients; and the consequence is, that those, who receive no benefit, leave the place in silence.

The patients seemed to be of two classes—the one animated with an exuberance of enthusiasm, and the other depressed with the gloom of despondency, yet willing to give the treatment a further trial, it being "a maxim" that "the cure is long, and requires much patience."

The day after Miss S. S.'s decease, Captain Wolff invited me to accompany him to the house where she died. On the sheet being removed from her face, I was surprised at beholding her surpassing loveliness. She seemed to me to realize the *beau ideal* of feminine beauty. An involuntary tear came into my eye, which the presence of others repressed, and the words of Moore's melody came unbidden to my memory,—

"All that's bright must fade."

If so lovely in the sleep of death, thought I, how much more so must she have been when animated and beaming with intelligence! Little did I suppose, whilst contemplating this heart-rending picture, that in the same room I myself should

be reduced to the verge of life! Laying on a straw pallet, her hair dishevelled, large boils on the palms of her hands, to which the wet rags were still adhering, the room scantily furnished, cold and comfortless, an involuntary shudder came over me! Suspecting that she died a victim to the "water cure," I took the pains to make myself thoroughly acquainted with her case, and, partly with this view, went afterwards to lodge in the same house.

Here I met with Herr Richaneck, one of those needy adventurers that frequent places of public resort. This man was seeking employment as a "water doctor," and assiduously courting the acquaintance of the English, myself among the rest. He pretended to be as well acquainted with the treatment as Priessnitz himself. I recommended him, however, to obtain from the latter a certificate of his proficiency, which, with some difficulty, through the intervention of one of the patients, he ultimately accomplished.

This individual had been an assistant-surgeon in the Austrian service, from which, as I was informed, he was dismissed. Whilst lodging in the same house with him, he read me a "parallel," as he termed it, between the treatment of syphilis with mercury, and with water, which cases he pretended had occurred in his own practice. On my inquiring in what doses, and in what preparations, the mercury had been administered, unprepared for such questions, he became confused, and totally at a loss to answer. A physician at Vienna, I was afterwards informed, had written a statement similar to the one he produced, of which, probably, his was a copy. My suspicion being excited as to his knowledge of medicine, I inquired how he would treat the gout, or a typhus fever, according to the usual method. He then drew from his drawer a synoptical table of diseases, such as professors of the practice of medicine usually deliver to their pupils, and, referring to the diseases alluded to, read their diagnostic symptoms, and the remedies employed, in which, however, the doses

were unluckily omitted. This person was a most *outré* "water doctor," and declaimed violently against medicine, or the "poisonous drugs;" and such are the men generally who pretend to consummate skill in the use of this, their infallible remedy, and who, with the veterinary Weiss, the nephew of Priessnitz (one of the common bath-attendants at Graefenberg), and a host of other Germans, inundate this country, and not unfrequently assume the titles of surgeons and graduated physicians.

Vincent Priessnitz, aged about 42, middle size, broad chest, well-built, erect, enters the room with a short, light, active step. Marked with the small-pox, he appears older than he is. He has small grey eyes, deeply seated, restless, twinkling, searching and suspicious, so that it is unpleasant to give him a steady look, under which he always seems impatient. His forehead appears receding, which arises from a fulness of the frontal sinuses, and not from any deficiency of cerebral development. His head is prominent at the vertex, large at the sides and behind the ears, where phrenologists place the organs of caution, secretiveness, acquisitiveness, firmness, and self-esteem. His manners and attitude are studied and constrained, from having practised the habit of compressing his lips, and, if standing, of planting his body in a fixed and firm position, especially when giving directions to his patients, or listening to their inquiries. His answers are always short, and frequently obscure. If the patients trouble him with much questioning as to the rationale of his treatment, or the nature of their complaints, they are generally dismissed with a bow. Never was the *ipse dixit* of Aristotle considered more conclusive than the answers of Priessnitz. Their very obscurity carries with it the notion of a mysterious revelation, and is by many superstitiously considered a proof of inspiration. The friends of the patient eagerly inquire, "What said he?" and his sayings are often collected and treasured up, as were the scattered leaves of the Cumæan

Sybil, or the dictates of a tutelary genius. Whilst giving his advice, he frequently predicts events, which for the most part are sufficiently remote as to the cure, but more at hand as to the effects of the treatment. He is sometimes correct in the former, and, from long experience, seldom errs in the latter. This foretelling of events has acquired for him an immense reputation amongst his imaginative countrymen, and led to that absurd belief that "he can see into the human body as if it were made of glass;" and so fully are they persuaded of it, that the phrase is of constant recurrence, and in every one's mouth at Graefenberg. By this intuitive faculty, he affects a knowledge of not only those diseases which already exist, but of those also which are latent, or have not yet manifested themselves. Thus will he prognosticate their future appearance, when called forth by the searching power of water. Confining himself to this remedy, and clothed with this mysterious power, he has acquired for himself the title I have mentioned, of "Nature's Inspired Physician," which he does not hesitate to assume. Of late he is said to have become more cautious in his predictions than he used to be, especially amongst the English. In giving his directions he seldom assigns a reason; neither does he inform his patients how long any part of the treatment is to be continued; but leaves them, on this most important point, as well as on every other, entirely in the dark. Should the reluctant patient hesitate, or consult his acquaintance, "Priessnitz said so, therefore it must be done," is the immediate reply. Thus his orders are as blindly followed, as they are obscurely given.

Consultations generally take place at table immediately after dinner, when this "Physician of Nature" is approached with the greatest deference and reverential awe. By some he is looked up to as a demi-god, and not unfrequently so designated; by others, who have not received any relief from his treatment, he is considered as a successful impostor.

Whether, through the infatuation of his own countrymen, he has been imperceptibly led to impose upon himself, or whether he impudently assumes a character to which he knows he has not the shadow of a claim, is somewhat difficult to determine. Perhaps the veil of mystery is thrown over him in order to enhance the value of his advice; seeing men are apt to despise that which is simple, however valuable, on account of its simplicity, whilst they greatly extol that which is abstruse because it is above their comprehension. Priessnitz may impose upon himself, and therefore upon others; he may not be, strictly speaking, an impostor; he may believe that water is Nature's universal remedy, and adopt it as such. However this may be, there is no doubt of his having performed many successful cures in cases which had baffled the treatment of the medical practitioners of his own country, both far and near, especially in diseased joints and bones, in scrofulous and foul ulcers, in gout, rheumatism, and other diseases.

In a country where the medical profession is at a low ebb, and even the well educated people are blindly superstitious, such cures, performed by an illiterate peasant, with means apparently so inadequate, seem nothing short of miracles. It would require a very humble mind indeed not to be a little vain of its success, and a very strong head indeed not to become intoxicated with an adulation that amounts almost to idolatry.

If Priessnitz be not an impostor, still has he recourse to artifice, in occasionally taking pains to conceal his practice, or to render it difficult to be understood. Thus, he never treats any two cases that are precisely similar in the same way, though proceeding from the same cause. For example, in head-ache, to one patient he orders the head to be bathed in cold water, to a second the feet, and to a third, the use of a "sitting," or hip bath. This difference of treatment in similar cases is referred to as an indication of his faculty of "seeing into the body," and beholding, as it were, the disease

itself with the greatest nicety, so as readily to discriminate the various shades it presents.

Having thus apparently no determinate method in the application of his remedy, the superficial observer may sojourn long among the patients before he can learn the secret of the "water cure." The fact is, he pursues nearly the same routine with them all whatever may be their ailments, commencing with the more gentle applications, and gradually proceeding to such as are more stimulating, according to the strength of the individual, and the rebellious nature of the malady.

He considers the skin to be the principal outlet by which the "bad stuff," as he terms it, constituting the disease, is to be expelled. Therefore, when the skin is harsh and dry, and the pores closed, this "bad stuff" cannot escape. The frequent application of cold water draws it to the surface, opens the pores, and thus facilitates the object. In other words, cold water, by the stimulus of reaction, causes a determination of blood to the skin, and thus becomes a derivative; by which means it greatly increases the functions of this important organ, and solicits the escape of any critical discharge which may take place. He seems not to have any notion, at least he does not admit it, that the application of cold water to the surface ever gives rise to congestion in the large vessels. He says it is warm water which produces this effect, and repels the "bad stuff;" yet he admits the necessity of feeling warm after the application of cold.

The "bad stuff" being always disseminated throughout the body, it is useless to apply local remedies, without having first roused it from its dormant state, and driven it from its "hiding-holes." Drinking abundantly of cold water, perspiring in a moist sheet or sweating in a blanket, followed immediately by the cold bath or friction with water of a temperate degree, in the demi-bath, produce this effect, and set it in motion. Should these means, however, not have

the desired effect, the "Douche" or cataract-bath is then used as a last resource, and is considered a never-failing remedy.

The frequent reaction caused by cold water, greatly excites the system, and after a time produces a greater or less degree of feverishness. This feverish state, according to the doctrines of the humoral pathology, is the precursor of a crisis, and is expedient for the coction of the morbid matter. When this is properly concocted by the fever, it is said to escape by boils breaking out and suppurating in different parts of the body. But should these not appear, it is then declared to pass off in a more secret and unobserved manner, as by cutaneous exhalation, by the kidneys, or diarrhœa. From the quality of the food provided at Graefenberg, and the feverish excitement caused by the treatment, constipation pretty generally takes place: hence a diarrhœa, being of rare occurrence, is considered a most favourable "crisis."

When boils recur frequently without affording relief, it is attributed to "bad blood" as well as "bad stuff," which latter cannot be drawn out or got rid of, until the former becomes changed or regenerated. It being considered impossible to recover health without some evident sign of the "bad stuff" making its escape, it is the custom of the patients to inquire, not after each other's health, not whether they are better, but whether the "crisis has yet appeared, how it matures, and what quantity of pus is discharged." This is the almost constant theme of conversation. Therefore, the manifestation of what is called a "crisis" becomes a matter of great rejoicing and congratulation, giving rise to a feeling of confidence and expectation of a speedy convalescence.

Boils do not make their appearance in more than about one-third of the patients, and should these happen to recover their health, the recovery, as a matter of course, is "cum hoc, ergo propter hoc;" the boils were the safety-valves by which the "bad stuff" escaped. Sometimes cutaneous erup-

tions show themselves after the fever; at others, as in scrofulous patients, the glands become enlarged. Whether the "crisis" appear in the shape of boils, eruptions, or tumefied glands,—or whether in perspired matter and viscid exudations elicited by the heating bandages, staining the linen, and emitting a peculiar odour,—in all these cases it is either the "bad stuff" or the "poisonous drug," with which the system is impregnated, making its exit. When two or more of these critical discharges simultaneously occur, it is attributed to the "bad stuff" of different diseases, or different "poisonous drugs" struggling to escape at the same time.

Such are the doctrines of Graefenberg; and notwithstanding the jargon made use of, there is much that is good to be culled from them. The recent experiments of Orfila, in cases of poisoning with arsenic, incontestably prove that mineral preparations are not only disseminated throughout every part of the body, but continue there located for an indefinite time. There can be no doubt that the same thing takes place in respect to those administered medicinally. Where mercury has been given, this is well known to be the fact. A physician at Breslau has a large collection of bones containing portions of globular mercury in their cellular tissues; and there are many such collections in different parts of Europe. Priessnitz's theory of disease and of poisonous drugs, appears to have been derived from mis-treated cases of syphilis, in which mercurial remedies have been improperly administered. Two-thirds of his patients labour under this disease in its secondary form. The same observation is alike applicable to whatever we eat or drink, that does not go through the process of digestion and assimilation,—the unassimilated particles remain more or less lodged in the system, and prove a source of irritation and disease.

The *modus operandi* of medicine is a mystery equally as great as that of the hydro-therapeutic means employed at Graefenberg. If we ask the question, "Quare facit opium

dormire?" we must confess our ignorance, and reply with Molière, "Quia est in eo virtus soporata." If disease proceed from peccant matter introduced, or generated in the body, medicine must act upon it in one of two ways, either by expelling it from the system, or by neutralizing its effects through combination. Priessnitz has adopted the latter theory, which is the view taken by many celebrated medical men in respect to the action of mercury on the venereal virus. It is possible that both theories, to a certain extent, may be correct. Quinine, given in large doses to cut short an intermittent fever, frequently leaves behind it an induration of the spleen or liver, of which the patient may ultimately die. Again, where the medicine taken combines with the morbid matter, it may give rise to a new train of symptoms, and generate a *tertium quid*, a something between the drug and the disease, as is believed to take place in mercurial syphilis; and something similar to this may probably occur between quinine and the absorbed miasma.

However uncouth and unscientific "bad stuff" and "poisonous drugs" may appear, Priessnitz has high authority in the profession for his theory on this subject; and the cures he has performed tend in many cases to bear him out. How far the other part of his theory may be correct,—viz. that the water treatment dissolves the combination between the drug and the morbid matter; then expels the drug; and afterwards, when the disease has gone back to its original form, expels that also,—is, perhaps, somewhat doubtful. This notion is also taken from the treatment in use for secondary syphilis. I examined a case in which the ulcers in the throat were white, equable, round and flat, with a healthy appearance. This patient had been under treatment about nine months; and had suffered from a mercurio-venereal sore throat, without ulceration, for several years.

Maxims at Graefenberg.—The skin is the habit of the man, by which we are enabled to judge of the interior of the body.

When it is harsh and dry, cold or hot, hard or puckered, like the skin of a chicken, and of a dull colour, it indicates that the body is suffering from some internal disease. It is the main outlet for diseases, but, in the above condition, the "bad stuff" cannot escape, the pores being closed up and the vessels contracted. All diseases proceed from a vitiated state of the humours. At first they are local and acute, but afterwards become general and chronic. In no case does medicine expel these vitiated humours from the system, or radically cure a disease. The *modus operandi* of medicines or "poisonous drugs" is by enveloping the "bad stuff," or morbid particles, constituting the disease, so that they are in some measure neutralized, and, a combination being thus formed, they both, for some time, remain dormant in the system, but ultimately give rise to a new disease, accompanied with a new train of symptoms, intermediate between the "bad stuff" of the original disease and that produced by the "poisonous drug." Water is the only remedy for disease; therefore, every disease that is curable may be cured by water. It is the most potent thing in nature as a penetrant, solvent, and diluent. It penetrates every tissue, and searches out all the "hiding-places," of the combined "poisonous drug and bad stuff." It dissolves, dilutes and separates them, and afterwards carries them into the torrent of the circulation. A fever is then produced, and the disease, resuming its original type, becomes again local and acute. By the stimulating effects of cold water, friction, sweating, and the heating bandages, the pores of the skin are opened, the circulation is restored, and whatever is noxious to the body is derived or drawn towards the surface. The manner in which these noxious particles are discharged is called a "crisis." Each "poisonous drug," as well as the "bad stuff" of each disease, has its own proper "crisis." The "poisonous drug" is first driven out; afterwards another "crisis" takes place, by which the "bad stuff" is in like manner expelled. When these so-called "crises" occur fre-

quently, without being attended with any benefit to the patient, it is, as before observed, attributed to the presence of "bad blood," that must be renovated and purified before the salutary "crisis" can be brought about, which is to effect the cure. To accomplish this desirable purpose it may require three or four years, or, perhaps, only as many months, according to the obstinacy of the disease, the age of the patient, and the vigour of the constitution. But it can only be done by rousing the vital energies and powerfully exciting the action of the great emunctories, especially the skin and the kidneys. When the vital energies are thus roused, and the particles of "bad stuff and poisonous drugs" thus separated and agitated, are set in motion, nature selects her own road for expelling both the one and the other. That nature suffers no constraint, but becomes her own physician, is laid down as one of the principal features and the great excellence of the "water cure." It is this salutary effort of nature which constitutes the veritable "crisis," and operates either by an eruption of boils; by viscid exudations from the skin, where the heating bandages are applied; by vesicular eruption, perspiration and secretion from the kidneys; or, lastly, by diarrhoea.

The "cure" is long, and therefore it requires much fortitude, perseverance, and *strength* of constitution to go through it. To support the strength, it is necessary to eat abundantly of food that is light and nutritious, but in no way irritative—hence condiments of every description are injurious, as are also salted and smoked provisions. Stimulating fluids, such as brandy, wine, beer, &c., even down to tea and coffee, are all bad. All food is better taken cold and in a solid state at dinner, and fluids of every description should be abstained from for a little time before, during and after this repast. Warm soups, or much drink of any sort, dilute the gastric juice, distend and debilitate the stomach, so that the food taken, instead of being perfectly digested, or fit for assimilation,

becomes a constant promoter of "bad blood." In respect of condiments, spirituous liquors, tea, coffee, &c., they tend not only to engender "bad blood," for want of assimilation, but act also as irritants on the nervous system, and are a fertile source of a great variety of nervous and other diseases. Milk is the blandest fluid that Nature prepares for her tender young, therefore it is a fit nutriment for all, and, with the addition of rye-bread and butter, should constitute the two meals of breakfast and supper. Sound rye-bread is more wholesome than wheaten bread, the former being slightly aperient, whilst the latter has the opposite effect. To restore the equilibrium of the circulation, promote the action of the skin, and give additional strength, it is necessary to take a great deal of exercise, especially in the open air, and the more laborious it is the better. That which induces perspiration, and brings into action the great pectoral muscles, as sawing or chopping of wood, is considered the best. Moreover, the greater the difference that exists between the temperature of the skin and of the atmosphere, the more rapid will be the progress of the cure; for which reason, in the treatment of long-standing diseases, winter is more favourable than summer.

The different ways of applying cold water to the skin, as well as the quantity to be drunk, should be regulated by the age, sex, and constitution of the patient, laying it down as a general rule to begin with the more gentle forms of the remedy, and thus gradually to prepare the body for such as are more energetic.

Such are the leading *maxims* of Graefenberg, many of which are evidently taken from the work of Dr. Hahn, of Schweidnitz, and those on "crisis" from the celebrated Dr. Stahl and the followers of the humoral pathology. Scarcely one can be said to be original, or to have been discovered by Priessnitz. In point of fact, he has neither invented nor discovered any portion of the theory or practice of the water

treatment;—he has been mainly indebted to Hahn for both, and can only lay claim to the terms “bad stuff” and “poisonous drugs” as peculiarly his own.

His asserting that it requires a great deal of strength to go through the entire process, and therefore recommending his patients to eat abundantly, shows that he is sensible of its debilitating and exhausting effects when long continued, notwithstanding he does not in words admit that such is the case. How can it be otherwise when carried to the dangerous extreme it is at Graefenberg? This is tacitly implied also by the more experienced of the patients, who say that it is quite sufficient after the first month to do only half what Priessnitz requires; whilst, on the other hand, a relaxed observance of his orders furnishes a plausible excuse for any mishap that may occur.

For nearly all these *maxims* as well as for the following account of the various ways of using cold water as a remedy for disease, I am much indebted to my friend Captain Wolff, whose indefatigable zeal in continually questioning Priessnitz himself, and making inquiries amongst the patients, enabled him to collect from these original sources a great mass of information. Possessed of an inquisitive mind, of much general knowledge, and himself suffering from disease, he was fully qualified for the task, and evinced considerable tact in its pursuit. The information I thus obtained may be relied on as correct—in fact it carries with it its own internal evidence.

PRACTICE AT GRAEFENBERG.

“*Abreibungen*,”—*rubbing the Body with a Sheet dripping wet*.—This mode of applying cold water to the skin is more or less used by Priessnitz in almost every instance, and is considered of especial service in cases of nervous debility and weak constitution. It is more soothing than the friction with

cold water in the half-bath, which sometimes causes irritation. It admits of frequent repetition, and is of great use when the body is hot and feverish. When there is a determination of blood to the head, the head and face are to be washed with cold water previous to the application of the wet sheet. When the debility is so great that reaction does not take place,—that is, when the patient does not feel a warm glow immediately afterwards, but remains cold and shivering,—he is to be put to bed for half an hour, and well covered up; then, when thoroughly warmed, he must get up and have it immediately repeated; and then dress quickly and take a good walk, whatever may be the state of the weather, and during the walk drink several glasses of cold water. A glass of water must also be drunk either immediately before, during, or after its application, according to the inclination of the patient. Six of these applications may be used in the course of the day, even to the most feeble constitution, washing the face and head as before mentioned. This remedy is also recommended for such as do not become warm whilst enveloped in the moist, or humid sheet. It may, moreover, be used immediately after dinner, and with much advantage when the body is covered with perspiration from exercise. After it is thus freed from perspiration, and a reaction has taken place, the patient may be placed in the “*leintuch*,” or moist sheet, should the case require it. But if the patient perspire greatly from debility, or any such cause, either during the day or night, these perspirations should always be arrested, not by the “*leintuch*,” or moist sheet, but by the “*abreibungen*,” or friction with a wet one.

“*Nasse Leintuchen*,”—the Moist, or Humid, Sheet.—This remedy is applied in the following manner. A sheet is dipped into cold water and wrung out, generally across a pole, until the water will no longer drip from it. A blanket is then spread upon a palliasse, or hair mattress, and the

sheet placed upon it. Upon this the patient lies down on his back, when it is loosely folded round him. The blanket is then drawn over on one side and well tucked in, making a plait, or fold, about the hips, so that it may lie closely; afterwards it is drawn over on the other side as tight as possible, and very carefully tucked in, especially about the neck and shoulders, so that no steam or vapour can escape. The legs are then raised, and the bath-man turns the end of the blanket under the feet. A light down bed is placed above, with a coverlet or couple of sheets over it, and the whole is well secured.

This mode of applying cold water to the surface of the body is resorted to, as well as the preceding one, in almost every case, preparatory to the sweating process, the plunging bath, and the "*douche*" bath. It is said to be of great efficacy when the skin does not perform its functions from being either harsh and dry, or dry and cold, or dry and hot as in fever. In the latter case it may be repeated twenty times during the day, until the skin is cooled and perspiration ensues. In such instances, when the patient becomes quickly hot again, the sheet should be changed for another, in which he may remain half an hour, or longer, until again hot, or until perspiration is induced. After the application of this remedy, should the patient be sufficiently strong, friction with water, either cold or at the temperature of 50° or 60° Fahrenheit, may be used. But when there is much debility, friction with the wet sheet, as before observed, must be had recourse to, instead of the half-bath. The moist sheet may be used for an hour, three times a day, and, when the patient can bear it, this may be followed by the cold-bath.

To strengthen or brace the system, the moist sheet may be used only for a short time, merely until the patient becomes warm, when it should be changed for another, which may be repeated three or four times in the space of an hour. But,

to draw the "bad stuff" out of the body, the patient should stay in it a full hour. In some particular cases he may remain for a longer time, but then the sheet should be changed at the expiration of an hour.

"*Kotzen-Schweitzen*,"—*Sweating in a Blanket*.—In this process the blanket is applied to the patient precisely in the same manner as when it is used with the humid sheet, being tightly folded around him, especially about the neck and shoulders. When the constitution is robust and the "crises" are tardy in making their appearance, the patient undergoes this treatment; and, after having perspired from half an hour to two hours, according to circumstances, he either plunges into the cold-bath, having previously washed his face and breast, and remains in it until he experiences a sensation of cold or slight shivering; or else he is well rubbed in the demi-bath, with cold water or with that which has the chill taken off, until a glow is produced on the skin. In either case, he is to drink a glass of cold water immediately afterwards, dress speedily, and take a walk, repeating his draught during the walk as often as he may find it convenient. The more general rule is not to drink before the reaction has taken place, and the circulation fully established. After having drunk one glassful of water, a second ought not to be taken if the first remain cold or heavy upon the stomach; neither should the patient drink it if he feel chilly.

"*Umschlag*,"—*Wet Bandages*.—These are of two descriptions; the one heating, so as to produce the effects of a warm fomentation, and the other a cooling bandage. The first consists of a linen cloth merely moistened with cold water, which, when thoroughly wrung out, is closely folded either round the part affected, or where it is desired to produce cuticular irritation and a metastasis of the disease. This wet

bandage is to be well covered with a dry one, and kept constantly applied to the part, and renewed three or four times a day, or as often as it becomes either dry or disagreeably hot. The second, or cooling bandage, is merely a wet cloth, almost dripping, loosely thrown over the diseased part, without any dry covering, so that evaporation may freely take place. This is applied to all external injuries. A cut, or a wound, should be first bound up with a dry rag, and then the evaporating process used over it, as recommended by Vander Heyden in cases of broken shin; but, if the wound be extensive or the inflammation intense, then a part at some distance from the wound should be bathed with cold water; as, for example, in an extensive cut of the hand, the elbow should frequently be bathed, and not the hand. A burn is treated in the same manner. When the inflammation has disappeared, the bandage is not to be removed, but, from time to time, moistened when dry, and continued until there is reason to believe that the wound is perfectly healed.

When a "crisis" appears, the heating bandage is constantly kept to the part or parts affected. This will provoke it, and draw a greater abundance of humours to the place. In all cases where pain exists, an "*umschlag*," or heating bandage, should be had recourse to, which will either produce a "crisis," or soothe the pain without one. This remedy forms a most important part of the "water treatment."

Halb-bad,—*Friction with water in the half-bath*.—This operation is performed on the patient whilst seated in an oblong tub, containing from eight to fourteen inches depth of water, generally about 55° or 60° Fahrenheit. The mode of application is, by taking water into the palms of the hands, pouring it on the different parts of the body, and rubbing them at the same time. In this, the patient is required to assist, to rub his stomach, legs and arms,

whilst the attendant strenuously operates in the same way on his back and sides, and especially on any part that is particularly affected. Water is first poured on the head and face, and repeated from time to time. This bath is much in use, forming a portion of the preliminary treatment of nearly every disease. It is sometimes continued only for two or three minutes, merely to wash and refresh the body; at others, it varies from that to half an hour, or even a longer period, care being taken that sufficient friction be used to produce reaction, so that the patient may experience a sensation of warmth. This remedy is applied after the moist sheet, and frequently after sweating in a blanket; and is considered very effective in opening the pores and bringing out the "bad stuff."

Sitz-bath,—Hip-bath.—This bath is formed of a small round tub with a high back, just large enough to receive the patient in a sitting posture. The water is generally used cold, a dry sheet being thrown over the head and round the shoulders in lieu of a cloak. This remedy is also in frequent use, and is followed by friction with the wet sheet. It is usually taken at 11 o'clock, and often repeated in the evening; and is considered powerfully derivative, drawing down the "bad stuff," and therefore ordered in head-ache, dyspepsia, nervous irritability, "high-seated hemorrhoids," and almost every other case. The patient commonly remains in it for ten minutes, rubbing his stomach the whole time with the water.

The "Douche," or Cataract-Bath.—This bath is constructed on the declivity of a hill, and is supplied from a natural current of water so directed as to pass along some wooden troughs supported on stays to give them the required elevation. These troughs are contracted toward their extremities, so that the water may fall on the patient in a round,

compact stream, from a height of ten or twenty feet. The stream varies in thickness from the size of the wrist to that of the arm, and descends with considerable weight and force. This remedy is said to fortify and greatly excite the system, and is considered at Graefenberg most effective in expelling the "bad stuff," or those latent diseases which exist in the body. At first it is ordered to be taken for one minute, which, in summer, is gradually increased to five or six, according to the constitution of the patient; but, in winter, it is never used longer than from three to four minutes, more generally from one to two. When the "douche" consists of snow-water it is applied only on the diseased parts; but, if there be considerable pain, in a part suffering from acute rheumatism, or from a "crisis," it is not used at all. When the pain is chronic, or of long standing, and the disease obstinate, this bath should be taken from ten to thirty minutes, but only on the part affected, in order to increase the circulation, excite the action of the capillary vessels, induce a "crisis," and thus expel the disease.

The "douche" is never allowed to fall on the head. On first entering the bath, the hands are held up to break the stream of water, and thus form it into a shower-bath. Neither is the stream suffered to fall perpendicularly on the stomach or abdomen, as in that case it would be apt to excite vomiting, besides producing other bad effects. After the "douche" the patient is thoroughly rubbed with a dry sheet, and directed to take brisk exercise in the open air, so that the reaction may completely take place, and the circulation be fully restored. A glassful of cold water is drunk both before and after this bath.

This remedy is considered a "dernier resort," to draw out old complaints, and to re-establish the circulation, especially in such parts as have become benumbed or paralytic. It is never administered at the commencement of the "cure;" and,

when there is much irritation, head-ache, or other ailment, as during the catamenia, it is suspended.

Wannen-bad,—Plunging-bath.—This bath is constructed of a large circular vat or tub, from five to fifteen feet in diameter, and is supplied with a constant stream of running water of the natural temperature, which stands at about four or five feet deep. It is placed in a shed or outhouse, and furnished with steps and a rail to assist in getting out, and is taken after sweating in the blanket. The patient is ordered to dash some of the water on his head and breast previously to getting into it, or, which is preferable, to plunge in headlong; and, whilst in, he should put every muscle into action, rubbing himself and moving about. The time for remaining in, is from one to five minutes, according to his sensations; that is, he should immediately get out on experiencing the first indication of a shiver. He is then rubbed down with a dry sheet and speedily returns to his rooms, when the bath-attendant again rubs him down. He then dresses and takes a long walk, occasionally drinking a tumbler of cold water; and afterwards returns to breakfast.

Crisis.—This portion of the “water cure” is deserving of most particular attention, inasmuch as its success is said to entirely depend on bringing about this salutary effort of nature, by which the morbid matter, the *causa morbi*, is to be got rid of. To excite the system proportionably to the constitution of the individual and the nature of the malady, so as to produce the “crisis,”—to moderate its action when too violent, and to keep it up for a sufficient length of time,—require great skill and experience on the part of the “water-doctor;” whilst the means employed are the heating bandage, the moist sheet, the blanket and the douche-bath, with the drinking of an abundance of cold water.

When the “crisis” has appeared, in order not to pro-

voke too great irritation, on the one side, or to repel and arrest it in its progress, on the other, cold water is seldom used in the form of a bath, but the extreme chill is taken off, so as to make it about 50° or 60° Fahrenheit. When the "crisis," however, does not proceed freely and favourably, a hip-bath of cold water, or the "douche," is used, in order to rouse the system, and produce a higher degree of excitement, and this is continued for a longer or shorter period as circumstances may require. Sweating in a blanket accelerates the "coction," or maturation of the "crisis," by whatever means it may have been produced; and, at the same time, moderates the violence of the local action, by causing a considerable portion of the peccant humours, or "bad stuff," to exude by the skin, instead of being attracted towards the particular part where the "crisis" is situated. Further, in order to promote this "coction" of the humours, the part is frequently bathed in temperate water. Should it be desirable to remove the "crisis" from one part to another, bathing with warm water is said to repel it into the system, to come forth elsewhere. If accompanied with much itching and irritation, the heating bandage is frequently renewed, the water being eachtime thoroughly wrung out, as otherwise it might cause it altogether to disappear. This will soothe and allay the irritation. It may also be observed, that the bandage is not to be continued after the "crisis" is past, unless it be desired to bring it back, in which case, in addition to the bandage, the part is to be washed, and well rubbed with cold water several times a-day. Such are the different modes of application, and the rules of practice, adopted at Graefenberg.

Priessnitz never feels the pulse, nor examines the tongue, but judges of the condition of the body by the skin, which, as I have said, he calls "the habit of the man." When it is harsh, dry, cold, and puckered, he considers that the "cure" will be long and difficult, especially if this be accompanied with much heat in the axilla. With this condition

of the skin the digestion is imperfect, the appetite deficient, the bowels constipated, the feet cold, and the nights restless, indicating great derangement and chronic inflammation of some of the chylopoietic viscera. It is a bad sign, he says, when the patient cannot eat or sleep. The expression of the eye and countenance, the state of the body, the colour of the skin, the length of time since the attack of the disease, and the temperament of the individual,—all assist him in forming an opinion of the character, intensity, and probable duration of the disease. It is clear, I think, that these prognostic appearances have been taken from his observations on cattle, which, when suffering from internal inflammation, have the skin pretty much in the condition here mentioned, from the spasm with which it is attended. It becomes rough and corrugated, hard, contracted, and firmly attached to the subjacent muscles, with the hair standing out or sticky. The animal in this plight is said to be hide-bound, when its eye is dull, its head drooping, and the whole expression heavy and dejected.

When the patient comes from out his first bath, or after the first application of the wet sheet, on being rubbed dry, Priessnitz carefully observes the reaction, and passes his fingers over different parts of the skin and arm-pits, watching, at the same time, the change of countenance. Having then made a few inquiries, he gives his directions, which, as before observed, are similar in almost all cases. He is never inquisitive afterwards about the progress of the “cure,” and when consulted, his replies are very concise. The stomach is generally deemed in fault, to which the wet bandage is in most instances applied: and drinking more or less of cold water, from seven or eight to twenty or thirty, and even forty tumblers a-day, and walking constantly in the open air, are seldom omitted. All are recommended to eat heartily, as the “cure” requires a great deal of nourishment, and water will digest anything, which, if we may judge from

the quality of the food at Graefenberg, appears to be pretty true.

Whatever may be the directions given, they are always such as to occupy the whole of the day. Commencing in summer at four in the morning, repeating the remedies at eleven in the forenoon, and again at four or six in the afternoon, the patient may employ the intervening time in walking, and drinking of cold water. The operations are, in every case, carried to an extreme and irksome length. Hence, many of the older patients say, that it is quite sufficient to follow one-half of the advice given; and hence Priessnitz declares that not one-fourth of his patients do as they are bid, or they would get well much more speedily. For the first three or four months they are generally obedient, but afterwards begin to relax. Nor is this surprising. Although resolved to persevere with the treatment, they become wearied with constantly dressing, undressing, and dabbling in cold water. It is by no means agreeable to be roused from a comfortable sleep in the depth of winter, morning after morning, by candle-light, to be enveloped in a piercing cold moist sheet, and afterwards rubbed in a tub of cold water until nearly every particle of warmth is abstracted from the body; and then to repeat this in the afternoon, or to alternate it with a sweat in a blanket for two or three tedious hours;—well may it be said, therefore, that the “water cure” requires much enduring fortitude and strength of constitution, both to overcome the repugnance naturally felt, and to resist the congestion likely to ensue.

On the side of the hill at Graefenberg, some Hungarians, who were cured of mercurial syphilis, have erected “a lion” in honour of Priessnitz. On inquiring into the meaning of this from a retailer of witticisms, his reply was, that there ought to have been a hog and a bull in company with the lion to render the allegory complete: it would then have signified that to go through the “water cure” at Graefenberg requires the courage of the lion, the strength of the bull, and

the stomach of the hog. In every instance of death, which was brought under my notice, I ascertained that it proceeded from congestion, and not from disease—a sufficient proof that the treatment is sometimes carried beyond the endurance of life. This I assert fearless of contradiction, and the most enthusiastic admirers of Priessnitz cannot disprove the fact, however much they may attempt to disguise it.

There is no doubt that the water treatment admits of great modification and improvement. It might, in the majority of cases, be most advantageously combined with medicine, especially with the watery infusions and decoctions. The vapour-bath might also, with much benefit and convenience to the patients, be substituted for the sweating-blanket, a wearisome and disagreeable operation. In rheumatism, a stream of vapour might be directed to the parts affected, as practised with so much success in the Russian vapour-baths at Hamburgh. Topical bleeding, as with leeches or cupping, might occasionally be had recourse to, according to the excellent practice of old Vander Heyden; traction, also, or dry cupping, a system lately revived by Mr. Cronin. But, in every case, the course of treatment ought to be regulated by the constitution of the patient, so as to allow nature some repose. There are various other suggestions that will necessarily present themselves to a sensible and well-educated medical man. If, however, in the hands of an ignorant and presuming peasant, the revival of this old method of treating diseases, has been found to effect so much, far greater results might be expected from it under more auspicious circumstances. Almost all those, who at present practise it, appear to be as ignorant of the fatal effects of cold as Priessnitz himself. Whilst they deny the doctrines of Homœopathy, properly attributing its cures to the influence of the imagination and the strict regimen observed, they seem to forget that the same influence and regimen contribute largely to the “cure” under the water treatment; perhaps, in many cases, more than the treatment itself.

That it is efficacious in all diseases is utterly untrue. The same observation applies equally to medicine. Some are cured by it, others obtain relief, others again become worse, and to a few it is fatal. In the two latter instances, there can be little doubt that the treatment is carried to too great an extent. Whatever may be the merits or the demerits of the "water treatment," it will soon have a fair trial in this country, and the public will then be able to judge both of the one and the other. Those, who are desirous of experiencing it, will do well to seek out some establishment near at home rather than undertake a long journey and submit to all the privations and inconveniences of Graefenberg.

Patients, who have been cured or relieved by it, should cautiously avoid their former mode of living, or a relapse will be the almost certain result. That it possesses great efficacy, and that it is powerful in its operation, is fully proved by the writings of Vander Heyden, Floyer and Baynard, Smith, Hancock, the Hahns, of Schweidnitz and Breslau, Wright and Currie, as well as by the practice of Father Bernardo, and the works of several Italian physicians.

Priessnitz treats the greater portion of his patients with the most perfect indifference. No notes of the cases are recorded, and, after the first visit, no questions are asked; the patient may remain at Graefenberg for years, with very little, if any, notice being taken of him. It is not considered necessary to do so, as his Doctor is always present to be consulted. This very indifference contributes towards his spurious reputation. One of his enthusiastic admirers informed me, that he entertained a great contempt of the generality of mankind, and compared him in this respect to Napoleon, and some other great men. This contempt is perhaps very sincere, considering the specimens by which he is surrounded. The late Professor Rust, of Berlin, having visited Graefenberg, to ascertain the efficacy of the water treatment, observed that the people he met with there were

an assembly of fools, amongst whom he could discover only two sensible men, himself and Priessnitz. It is an understood thing that he is never to be needlessly consulted. When, however, these tacit regulations are infringed, he betrays much impatience, gives a short answer, and dismisses the intruder with a bow. On this account his patients are in the daily habit of consulting one another. It is surprising how soon they seem to acquire a perfect knowledge of the "water cure," and how prompt they are at giving their advice, even unsolicited. Thus, in a short time, they all seem to become "water doctors," while Priessnitz himself presides as the tutelary genius of the place, only to be resorted to, like the Delphic Oracle, upon grand and solemn occasions.

Thus enveloped in the rays of his own genius, he is considered perfectly justified in maintaining the respect due to his "supernatural talents." When I spoke of his want of common courtesy and attention, the reply was—that he could not possibly make daily inquiries after the health of all his patients—that he remained five minutes at table every day after dinner, and as long after supper, to give advice, which surely was as much as could be reasonably expected. Besides, if it were otherwise, his advice would become so hacknied as to be no longer valued. "How could he," said my acquaintance, "repeat the question of 'How do you do?' five hundred times a-day, listen to the reply, and give his direction?" There, in short, he is, almost as sparing of his advice as the lady was of her charity, who, not being able to give a penny to every beggar, never gave a penny at all.

Be it observed, however, that notwithstanding such is his conduct towards his ordinary boarders at Graefenberg, and towards those who only pay the expected fee of two florins per week for his advice, and perhaps not even that in full, still is he by no means deficient in attention to his more wealthy patients, visiting them every other day, or oftener, should they require it. Nevertheless, whatever may be his

assiduity towards these patients, it does not appear that he follows the advice of an old medical author, who, treating on the virtues of medicines composed of pounded pearls, the bezoar, and other precious stones, sagely remarks, that to the rich a double dose may be administered, because they can afford to pay for such costly remedies,—the reason is, perhaps, that water may be had everywhere, *vili pretio*.

Surrounded by the halo of superstition, from his supposed faculty of “seeing into the human body, as if it were made of glass,” he enjoys a truly catholic reputation for infallibility; and such is the blind and enthusiastic confidence this surprising faculty inspires, that a patient “admitted to the cure” considers himself at once as good as cured. “Are you *admitted* to the cure?” is the question asked upon the arrival of every new comer. On being replied to in the affirmative, a congratulation immediately follows, equalled only by that which is called forth by the suppuration of the boils, when the “crisis” has made its appearance. The patient has then only to follow the injunctions of Priessnitz, having nothing further to do with the disease, or the disease with him, for it is already accepted as an offering at the shrine of the “Genius of Cold Water.”

Being thus admitted to the cure, of itself so important a privilege—should the patient not recover his health it must be his own fault; and should he die, it cannot be helped. He has not strictly adhered to the injunctions delivered to him. He has either done too much, or he has done too little, the more usual fault. The water for the bath was too cold, or not sufficiently cold. In short, something was amiss. Every, even the most trivial circumstance assumes an importance unperceived by vulgar eyes, which cannot pierce into the body and behold its disease. For these faults of commission and omission Priessnitz is not held accountable. The slighter the error the greater his discernment in detecting it, and he is praised accordingly.

Few die at Graefenberg, for none, who appear to have a tendency that way, are *admitted* to the cure. Priessnitz allows that one-eighth of the applicants are rejected, but the number is about a fifth. He tells these persons that the "water cure" was not made for them; and then bluntly dismisses them, saying, it is as well to part at first as at last, since it must come to that. Without a ray of hope, the suffering, dejected and rejected pilgrim at this shrine of health has to retrace his long and weary way, with the image of death staring him full in the face. Many of these, unwilling to abandon every hope, placed themselves under the care of the veterinary Weiss, who carried out the sweating system to a much greater extent than Priessnitz, by which some were benefited and some cured. They afterwards became pretty generally distributed amongst the other universal-remedy establishments with which Germany abounds; such, for example, as the Hunger and Thirst Establishment, the Iodine Bath and Vapour Establishment, or some Homœopathic Institution.

Those who have not so immediate a tendency to death are sometimes, by much entreaty, allowed, as a great favour, to try a little of the "cure," on their own responsibility. Upon the whole, this is judicious. Frequent deaths would destroy the reputation of the establishment, therefore such as are dangerously ill, or labour under debility, are wisely sent away; for, as he truly, though uncouthly tells them, they have not sufficient strength to undergo the treatment. It is clear that, if there be not sufficient strength or vigour left in the system to produce the necessary re-action, congestion, accompanied with the worst consequences, must ensue.

Moreover, if, after three or four months, the treatment is found not to agree with those who have been admitted, or should they become so much worse that apprehensions are entertained as to the result, the operations are instantly suspended, and they are recommended, or rather ordered,

to go home until they have regained sufficient strength, when they may return and undergo the remainder of the "cure." Generally, the patient withdraws of his own accord before death closes the scene. Sometimes, an open rupture takes place, as in the instance of Dr. Bulard de Meri, always on pretence that the prescribed rules have not been punctually observed, which leads to an unceremonious dismissal.

The above reasons, inasmuch as there are scarcely any acute diseases at Graefenberg, sufficiently explain why deaths are not more frequently occurring than they are, notwithstanding the churchyard of Friewaldau is not without the tombstones of those whom this remedy misapplied has sent thither.

I do not make these remarks with any view to depreciate the sanatory virtues of cold water, of which, on the whole, I entertain rather a good opinion, but merely to report *the practice of Graefenberg*,—to show that it is not without its charlatanism, which, perhaps, to a certain extent, is not to be wondered at. Where is the physician who never lost a patient, either through the incurable nature of the disease or from a mistaken mode of treatment? It is an old saying, that a physician knows not his profession until he has thrice filled a church-yard; and one case of failure often affords more valuable information than twenty of success—it becomes a guide to our future course.

Priessnitz frankly tells his patients that the "cure" is long, extending to three or four years. Many of the patients leave in the second year, believing themselves better; others, who have derived no benefit, leave also, endurance being quite exhausted. In these cases, the want of success is of course attributed to want of patience and of perseverance.

Cold weather is said to be more favourable to the cure of disease, especially rheumatism, than warm weather—an argument that is quite necessary to keep up a sufficient warmth of enthusiasm when the severity of winter begins to be felt.

At this season they are, or fancy they are, a vast deal better, and leave in great numbers the cheerless abode of Graefenberg, with the laudable intention of pursuing the "cure" more comfortably at home. In vain Priessnitz endeavours to prevail on them to brave the keen mountain-blast in this wilderness of snow, with the assurance that spring will see them restored to perfect health. Away they go, like swallows. It is melancholy then to behold the immense dining-room and its four deserted tables, each capable of accommodating a hundred guests; the half of one is now amply sufficient. There sit the courageous few, shivering with cold, looking blue and wo-begone, and seeming as if about to sacrifice themselves, not on the burning funeral pile, but at the shrine of ice and cold water; whilst, to compare small things with great, Priessnitz views them, as Napoleon did the remains of his army amidst the snows of Russia, deploring the loss of their companions. Very few try a second winter, or if so, they generally move down to warmer quarters at Friewaldau, a town abounding with filth and mud, with here and there a stepping-stone to enable the foot-passenger to pick his way.

Priessnitz is never at a loss for an explanation. A vesicular eruption having disappeared in a lady without any assignable reason, he said it was occasioned by her linen and sheets having been washed with soap which had repelled the "crisis." Some time back a girl, eleven years old, took the measles and was cured in eight days. This was said to be a most surprising "miracle."*

The society of Graefenberg is, as might be expected, of a very motley description—from the German prince down to the artisan, with a copious sprinkling of counts and barons. Their manners are best studied at the dinner-table. The

* The medical reader does not require to be told that, in the latter case, eight days is the natural duration of the disease, and, in the former, the eruption, which, in all probability, was produced by an excess of sweating, would be likely to disappear as suddenly as it appeared.

conventional decorum of the English is, in every respect, set at utter defiance. There, they may be seen picking their teeth and cleansing their nails with the sharp-pointed dinner-knife, before, during, and after the repast. Their conversation is carried on in a noisy tone, as if quarrelling and in a perpetual passion, more resembling the talk of a tap-room than that of gentlemen. The meat is cut into small lumps before being placed on the table; and the better to judge of its quality, it is not unusual to see them smelling the dish, turning over and scrutinizing the various pieces, sticking their forks first into one and then into another, in order to select the least objectionable morsels. Sometimes, after having cut off a mouthful and tried it, the rejected piece is returned to the dish and another taken in its stead. And such is the contagion of example that the Englishman I picked up on the road contracted these disgusting habits. Advised to eat plentifully and determined to have their full share of the provisions, many may be seen with a couple of plates of meat piled up before them at the same time—one of tough, stringy cow-beef, called “*bouillé*,” and another of baked meat, or “*rotie*,”—the whole of which is greedily devoured. Every Sunday there is a ball. They are universally good dancers, and the politeness of their manners very much resembles that of a dancing-master. A number of set phrases, accompanied with sundry scrapes and bows, serve on all occasions. On further acquaintance, however, these manners are laid aside for an unpleasant degree of familiarity. There are a few exceptions, principally amongst the Austrian and Prussian officers, but the description is correct as respects the majority, and their manners in private, I was informed, are still more disgustingly swinish.

The food at Graefenberg is abundant, but of the worst and coarsest quality, such as would be scarcely tolerated in our workhouses. Sour rye-bread with caraway-seeds; cow-beef, frequently without a particle of fat, and generally served up

with salted cucumbers and some description of sour sauce; twice a week there are shapeless dumplings, made of the scraps of bread which have been left at table and then soaked in the skimmings of the pot-liquor, and squeezed into lumps. Once I detected a very fishy taste in the "*bouillè*," and finding it the same the next day, I inquired the reason. It appeared that the sauce had been prepared with rancid Dutch herrings, a favourite condiment amongst the Germans. Beef, apple pancakes, hasty-pudding, or baked puddings, generally compose the dinner. On alternate days, there is the addition of the "*rotie*," which is usually baked veal, young, lean, and flabby, partly burnt and partly stewed. This, as is customary in Germany, is served up with some sort of stewed fruit, as apples, pears, or plums. On these days the pastry, as it is called, is omitted. The breakfast consists of bread, milk, butter-milk, and butter. In summer there is the addition of wood-strawberries, which are to be purchased cheap. The supper is the same as the breakfast, with the addition of small potatoes, with their jackets on, cracked and watery, as they are commonly boiled for pigs. Such is the fare of Graefenberg, and well, indeed, may it be said to require the stomach of a pig to digest it, and that water is a powerful solvent.

During a portion of my stay, we were treated on Sundays with baked geese for the "*rotie*," lean, hard, and tough. A large quantity of them was kept in a muddy inclosure with the appendage of a pond. They looked very miserable, dirty, wet, cold, and half-starved, frequently sparing the cook the trouble of killing them. Madame Priessnitz, who invariably superintends the kitchen and is an excellent housewife, was much applauded for her domestic economy in having the feathers made into coverlets and sold to the patients.

Numerous complaints have been made respecting the diet. I was informed that during the summer the meat was frequently tainted, and sometimes sent away as not to be endured

even by a German stomach. These complaints, however, are made in vain, for patients flock in, and discontent is disregarded. The price of the dinner is thirty-eight kreutzen a head, the same as at the best "*table d'hôte*" in Austria; a better one may be obtained at Freiwaldau for twenty.

Priessnitz is said to have realized a million of florins, 100,000*l*. At Johannisberg, about five German miles distant from Graefenberg, he has purchased an estate for 100,000 florins. Upon this property there is a brewery, to which he has added a brandy distillery. When reproached with the inconsistency of being a brewer, a distiller, and at the same time a prescriber of cold water, his reply was, that it mattered not what a person in health ate or drank. His wife and himself, as I was informed, are in the habit of partaking of both wine and liqueurs; perhaps this may not be true. Much of his time is occupied, however, in looking after the brewery and distillery, and, it is reported that he wishes to retire from the water establishment could he meet with a suitable successor and retain a good portion of the profits.

Dr. Behrend, of Berlin, declares that Priessnitz told him the water cure was his own discovery. Having been seized with a fever, when there was no medical man in his neighbourhood, he directed cold water to be pumped upon himself to allay the burning heat, and afterwards went to bed, well wrapped up in a blanket. A profuse perspiration broke out, and he was cured of the fever. His father's cow falling ill, he treated her in the same way and cured her also. He then tried the method on some of his neighbours with equal success. The report of these cures gradually spreading to the Prussian frontier, numerous invalids came to consult him.

Whilst at Freiwaldau, I made some inquiries respecting Priessnitz's claim to the invention of the "water cure." Accidentally I fell in with a respectable inhabitant of the place, who had been a companion of his when a boy, and was well acquainted with its history, which may be given as

follows :—Captain Kitner, a retired officer from the Austrian service, residing at Freiwaldau, used to amuse himself with catching small birds in the forest of Graefenberg, and employed young Priessnitz, a sharp, intelligent lad, to assist him in watching the twigs which he had besmeared with bird-lime. Finding him one day reading to beguile the time, he offered to lend him some books that would be more useful to him than the one he was engaged with; upon which he gave him a book which treated on the cure of diseases by cold water. Shortly afterwards the boy, in cutting twigs, happened to cut his finger, inflicting upon it a deep gash. He tried the water cure, as prescribed in his book; dipped his finger into cold water until it had ceased bleeding, then wrapped it up in a dry linen rag, and again plunged it in water. This bandage he kept constantly wet until he found that he could pinch his finger without pain, and it felt as if well. Upon removing the bandage, he was delighted to find that it had not only healed without suppuration, but without leaving scarcely a mark or scar behind. Soon afterwards his father's cow became hide-bound and feverish, when, according to the directions in his book, he dashed several pails of cold water on the animal, then threw a cloth over her, and led her into a warm stall. On returning after a short absence he found the beast lying down, panting for breath, as if dying. He then threw another cloth over her, and went to get his dinner. After dinner he again returned, expecting to see her dead, but upon removing the coverings, he found her in a profuse sweat, covered with a frothy foam and breathing freely. Upon this he threw some more cold water over her, had her well rubbed down with whisps of straw, then covered with dry cloths, and led out to exercise for half an hour. The next day this treatment was repeated, and on the third day the cow was perfectly well, grazing in the field with the others.

Sometime afterwards, it is said, that he met with an accident

himself from a cart-wheel passing over his body and breaking a rib. There were no surgeons, or medical men, at that time, within twenty English miles of Graefenberg, except a barber-surgeon at Freiwaldau, who was immediately called in. This man, not knowing what ought to be done, put over the contused or broken rib, if, indeed, the rib were broken, a large adhesive plaister, spread on a piece of leather. This caused considerable irritation and restlessness. Having himself, on a former occasion, succeeded so well with the cut finger—the wet bandage subduing the inflammation and healing the wound—and having read of wet bandages being applied also to the body, Priessnitz directed one to be put to his chest, to alleviate the pain he suffered. The sticking-plaister was therefore torn off, and to effect the purpose he rested his shoulders on one chair and his hinder part on another, raising, from necessity, the trunk of his body into an arch—a position, the best possible to bring the ends of the rib together if broken. A long piece of towelling was then dipped in cold water, wrung out and firmly bound round the chest; this was kept constantly moistened, and in a short time he perfectly recovered. Here was another “miracle!” My only reason for questioning whether the rib was really broken, or not, is the great exaggeration prevailing at Graefenberg upon these matters, so much so, that it is almost impossible to obtain a correct statement of anything, even from the patients themselves whilst describing their own cases. Be this as it may, whether the rib was broken or not, the treatment could not have been better; but, as is seen, it was in a great measure the effect of chance.

These two cures obtained for him a considerable reputation, and, as the “water cure” was said to be most efficacious in rheumatism, of which, amongst other diseases, his book treated, he tried it upon some of his neighbours with similar success. In the commencement, his mode of applying cold water was strictly confined to the practice described by

Hahn,—spunging or washing the body with cold water, wrapping the patient up in a blanket, and applying a wet bandage to the parts affected. Afterwards, in conjunction with these means, the hot and cold baths were used, plunging from the one into the other; Floyer and Baynard, from whose joint work Hahn copies so largely, having mentioned that the best cures were performed by the cold bath, in quick succession after the hot one. This was Priessnitz's practice for a long time without any alteration.

It does not appear that he originally adopted the moist sheet, notwithstanding Hahn makes mention of it. Herr Richanech gave me the following account of this important part of the treatment. A patient, suffering from acute rheumatism, had not had a night's rest for more than three weeks, owing to the feverish paroxysm which accompanies this disease during the night. Finding that he derived great benefit from the moist bandage, or "*umschlag*," applied to the parts affected, he imagined that if he were to use the "*umschlag*" over the whole of his body it might relieve the pain generally and abate the fever. Hence he had a sheet wrung out of cold water, wrapped himself in it, and was covered with a blanket and an eider-down quilt. This gave such instant relief that he fell into a sound sleep, and so continued until the following morning, when he awoke refreshed and free from pain. Priessnitz was immediately made acquainted with this important result, and as immediately enlisted the remedy into his means of cure.

This discovery in some measure superseded the practice of sweating in a blanket, and the moist sheet now almost invariably forms a preliminary step in the treatment. In some cases, it constitutes the entire treatment in conjunction with the hip-bath, the half-bath, or friction with the dripping sheet.

The same individual also informed me, that Priessnitz became accidentally acquainted with the using of the cold

plunging-bath immediately after sweating in the blanket; and that, in point of fact, he made no discovery himself respecting the "water cure," an assertion there is every reason to believe. A Russian, said Herr Richanech, conceived that it would be better to plunge into cold water after sweating in the blanket (according to the custom in his own country after the use of the vapour-bath) than to be spunged or rubbed down with a dripping sheet. He, therefore, had a large tub made for the purpose. Most of his countrymen, and many others also, adopted this alteration, and Priessnitz became so sensible of the improvement that he united it to his previous practice. In like manner some patients had, at their own expense, a "douche-bath"—a natural falling or cataract-bath, formed in the neighbouring forest, as an improvement on pumping cold water on the parts diseased.

From this brief narrative we may learn how much Priessnitz has been the child of fortune rather than the architect of his own fame or reputation. It was from the work of Floyer and Baynard that the two Hahns derived their knowledge of the water treatment, and nearly half the cases recited by Dr. J. S. Hahn are copied verbatim from these authors, to whom he makes full acknowledgment. Thus, as I have observed, the "water cure," which has sprung up among the mountains of Silesia, and is now practised by an unlearned peasant, derives its origin from our own country.

It is impossible to get at a correct account of the proportionate number of cures and failures at Graefenberg, inasmuch as the only record kept there is an entry of arrivals and departures, which, without reflection, might lead the visitor to suppose that all who came and went away were cured. And this supposition gains additional strength from the multiplicity of books upon the treatment to be met with there, abounding, as they do, with exaggerations and misstatements implying universal success, whilst every mishap is carefully suppressed. Colonel B——, who paid some attention to this

matter, and watched the departures in the autumn of 1842, assured me that the numbers cured fell vastly short of the report. This gentleman very justly remarked, that if the Austrian government had stationed some medical officer at Friewaldau, to perform the duties of a commissary of police, and make an entry of the particulars of every invalid's case on his arrival, and a counter one on his departure, they might then have arrived at something like the truth. To have established an office for that purpose, would have been much more judicious on the part of the Government than the sending thither a superannuated physician from Vienna to make his observations, and to receive possibly a *douceur* for his most accommodating Report, that "Water was a very simple thing, and could do no harm."

It will be seen, from the following *Cases*, how far the "water-treatment" really deserves the reputation it bears, and how far it is a "simple thing" in the hands of those who unskillfully use it. In its application to the surface of the body, the whole of the benefit is derived, in most cases, from an immediate and powerful resistance to its sedative effects—from rousing the vital energies to an effectual reaction. Hence, in a long-continued application and frequent repetition of cold to a debilitated frame, where the requisite reaction necessarily becomes daily more and more feeble, nature will soon be exhausted, and the patient will die from congestion as a matter of course. The "cold-water treatment," therefore, although in many cases a most efficient remedy, is by no means a "simple" one, but requires the utmost skill and caution on the part of the practitioner, and such a knowledge of physiology and pathology as few of those who have recently practised it seem to possess.

CASES.

Scrofula.—Miss S. S., aged eighteen, fair, transparent complexion, light brown silky hair, highly lymphatic tem-

perament, body in good case, slightly inclined to *embon-point*, had formerly been susceptible of cold, and subject to glandular swellings; was, therefore, frequently ordered to the sea-side, from which she derived much benefit, and latterly her health had so improved that she was free from complaint.

This young lady accompanied her parents to Graefenberg on a trip of pleasure, without the slightest intention of trying the "water treatment." She arrived there about the latter end of April, or the beginning of May, 1842. Her father, who was suffering from the effects of a sedentary life and from mental application, underwent the treatment, and was greatly relieved by it. Influenced by her father's success, and having caught some of the enthusiasm of the place, she was also induced to try "a little," in order not to appear singular. Hence, she consented to be enveloped for half an hour in a moist sheet, and then to be rubbed for two or three minutes with a dripping one; and during her walks she drank a few tumblers of cold water. The change of diet, the mountain air and exercise, the soothing, sedative effects of the moist sheet, the reaction that followed the friction bringing with it a warm and healthy glow, seemed during the first three or four weeks to agree with her remarkably well, as is almost invariably the case with every new comer. She increased in flesh; the muscles acquired additional strength and firmness; the respiration was free, even under the laborious exertion of ascending the steep hill from Friewaldau to Graefenberg; the complexion was blooming and rosy; the spirits light and cheerful; in short, she acquired a buoyancy of mind and body quite unknown to her.

Encouraged by these happy presages of future health, and yielding to the intreaties of her friends, she now consented to submit to the full process of the "cure," especially as Priessnitz promised a safe and certain removal of the "bad stuff" in three months, after which she would be perfectly free from every taint of disease for the remainder of her life.

Her parents, auguring well from these first effects, and

having the utmost confidence in the promises of Friessnitz, returned to England, committing her to the care of some friends whilst she leisurely pursued the "course." It was now deemed expedient to resort to more potent means to rouse the latent "bad stuff" from its "hiding holes," and expel it from the body. A wet bandage was therefore applied to the stomach; the douche-bath was ordered from one to two minutes every day; the moist sheet from half an hour to an hour twice a day, immediately followed by strong friction for a quarter of an hour in the demi-bath; to which were added the dripping sheet and the hip-bath once a day. Thus was her time completely occupied.

This constant application of cold water to the body roused the vital powers to the highest pitch, and was speedily attended with the usual feverish excitement. After the continuance of these violent means for the space of a month, the previously favourable aspect was changed, and the case assumed a totally different character. An incessant feverishness ensued. The glands of the neck, especially the right submaxillary gland, began to swell, and a few boils made their appearance. All this was deemed highly propitious and hailed with delight. The "bad stuff" was now in motion, and the "crisis" had commenced which was to carry off all disease and rid the body of every impurity. In order to accelerate a result in itself so desirable, to promote the "coction" of the humours, to moderate the violence of the "crisis," and to favour the escape of the "bad stuff" by cutaneous exudation, profuse perspiration, or sweating in a blanket, was superadded to the treatment already in use.

We now behold Miss S. S. in the full career of the "cure." All the different remedies were concentrated and brought to bear upon the system. The sweating process was used every other morning, and wet bandages applied to the boils and tumours, to promote suppuration; the douche, moist sheets, and sitz or hip-bath, continued as before.

After the infliction of these various remedies, *simul et semel*, for about six weeks, upon a tender and delicate constitution, the vital powers, as was to be expected, began to ebb. Her strength was greatly impaired, and the reaction, after the cold application, took place very feebly, if at all. *Whilst lying enveloped in the moist sheet she now first complained of pains in the stomach.* Notwithstanding matters were in this state for some time, Priessnitz expressed himself confident of ultimate success, and said that all was going on most favourably. Seven weeks previous to the fatal termination of the "cure," Miss S. S. was removed by her friends to the neighbouring town of Freiwaldau. In seven days after the removal a fever supervened, accompanied with delirium, which lasted for a fortnight. For this two moist sheets were ordered, in immediate succession; the first for half an hour, replaced by a second, in which she remained a full hour. On being taken from the sheet, she was placed in the half or demi-bath, at the low temperature of 50° Fahrenheit. For the first three days after the attack of fever she was well rubbed in the bath with cold water *for two hours*; afterwards for one hour, which treatment was repeated twice in the day. *Whilst in the bath, as well as in the moist sheet, she again complained of pains in the stomach.* The evacuations from the commencement of the fever were red as blood, and continued so to be until death; and latterly, they were nothing but blood. Previously to the fever there was a boil, or "crisis," as it was called, on her left breast; it did not suppurate, but receded during the fever. After the fever had left, a vesicular eruption broke out all over the body, but disappeared within a couple of days. At this time, large boils made their appearance, first on the soles of the feet, then on the palms of the hands, afterwards on various parts, or rather all over the body—on the arms, legs, stomach, and sacrum. Even at this period, a fortnight before death, Priessnitz pronounced these boils to be a salutary "crisis," and, in spite of all the

alarming symptoms, declared that in six weeks she would be perfectly well, and fit to undertake the journey to England. Having been seized with a violent shivering and cramp in her stomach whilst under friction in the half-bath, she insisted on being taken out, at which Priessnitz, when informed of it, became very angry, and the next day sent one of his own women with strict orders to prosecute this operation until she became warm.

The moist sheet and the half-bath were persevered with twice a day until within two days of her decease. *During the last three days she vomited blood.* No other remedies were employed to relieve the patient, and none to sustain life. On the night of the second day after the discontinuance of the treatment, this hapless young lady expired in the arms of her attendant, whilst being raised in bed, the blood at the same time gushing out of her mouth and nostrils.

On opening the body, the stomach was found to be coated with a thick brownish mass, extending into the jejunum, and the vessels throughout the alimentary canal were in a high state of congestion. There was no induration or enlargement of the mesenteric glands, and all the viscera were remarkably sound and healthy. The tumour of the submaxillary gland had not burst. Deglutition had been extremely difficult for several days before her death, and the only food she was capable of taking was the pulp of baked apples and a little bread soaked in milk, and that only in very small quantities. This case is so clearly marked, that it is superfluous to make any comment upon it.

On the day after her death I ventured to express an opinion at the dinner-table that she fell a victim to the "water treatment." "Oh dear! sir," replied Mrs. —, "how can you say so? Mr. Priessnitz treated her as gently as a lamb; he did nothing but put her in a wet sheet. What could be more gentle?" "Do you call that nothing, madam?" said

I; "it was precisely of that wet sheet that she died." This lady then ran on with great volubility, assuring me that such could not be the case; that the treatment agreed with her perfectly well, but that she disobeyed Priessnitz's directions by doing more than was required, which I afterwards ascertained to be utterly false. She further said, that, after she had been a short time at Graefenberg, she became as plump as a partridge and as red as a cherry, and could run up a hill like a race-horse. It was, in short, her own fault that she died. Poor young lady, how wert thou maligned!

When this conversation took place, the body had not been opened, and I was uninformed of the particulars of the case, which I afterwards collected principally from the woman who attended upon her and partly from those who had been acquainted with her. The report spread was, of course, that she had not followed the instructions given her; that she had remained longer in the moist sheet, longer in the cold bath, and drank more cold water than was directed. The quantity of cold water prescribed was ten tumblers a day; with difficulty she had managed seven. The moist sheet caused pains in the stomach; the cold bath increased those pains, and brought on a violent shivering. She was glad when the operation was over, and viewed it with a feeling of horror. It is not likely, therefore, that she *exceeded* the orders given. When she became very ill, it was only the promises of Priessnitz, the persuasions of her friends, combined with her own moral fortitude and a desire to recover, that prevailed on her to persevere.

At a subsequent period, when my friend Captain Wolff informed Priessnitz, that it was decidedly my opinion she died from congestion, induced by the treatment, especially the moist sheet, he shrugged his shoulders, and replied, that "something gave way in her inside, which caused death. That it was his practice to judge of the inside by the skin, but that he was restricted in his observations in her

case, and therefore could not tell what was going on within-side." He then mimicked the tone of her voice, and her retiring modesty, when he once attempted to remove her bathing dress. He afterwards ridiculed the English ladies for using bathing dresses at all, so different from the custom of his own countrywomen. And all this was said and done with a sort of acting or imitating their manners, highly amusing to his hearers, who burst out into repeated shouts of laughter. Such is the great, the immortal Priessnitz! *Proh pudor!*

It was no secret that the Mrs. —, before alluded to, a married lady of some eight or nine months standing, had so entirely overcome this national delicacy, that she did not scruple to undress herself in the presence of Priessnitz, and walk in and out the cold-bath with great composure, bearing in mind, no doubt, the well-known motto, that "beauty unadorned's adorn'd the most."

Ulcer, with Caries of the Bone, from a Gun-shot Wound.—The cadet Prince Lichtenstein, of middle size and of a full and corpulent habit of body, had received, whilst on service in Italy, a gun-shot wound in the leg, which injured the tibia. The wound remained open for two years, degenerating into a foul and fistulous ulcer, and discharging a fetid sanies, accompanied with caries of the bone. The surgeons of Vienna advised amputation; and, as a last resource, the prince went to Graefenberg.

Treatment.—Wet bandages to the ulcer, sweating every morning in a blanket, followed by friction in the half-bath, or plunging into the cold bath, and drinking copiously of cold water. This was continued without intermission for two years. The habit of body and general health became improved, and there was no loss of flesh, notwithstanding the continual sweating. The diseased or carious bone was gradually exfoliated in a great many pieces. The ulcer,

soon after the commencement of the treatment, assumed a healthy action and appearance, and was nearly healed at the period of the prince's departure. He fully recovered the use of his leg.

Fluor Albus.—The Princess L—— accompanied her husband to Graefenberg. She had an affection of the uterus, which Priessnitz at once pronounced to be “cancer uteri.” It consisted of a white mucous discharge, without any fetid odour, and unaccompanied with lancinating or other pains.

Treatment.—Hip-bath twice a day; the moist sheet, followed by friction with the dripping sheet, and sometimes by friction in the demi-bath; a wet bandage applied to the abdomen and lumbar region; cold water drank in moderate quantities; air and exercise. In the course of eight or ten months she perfectly recovered. The princess afterwards became pregnant, and at the period of her “accouchement” the hip-bath was prescribed to arrest the false pains and accelerate the labour. In the course of two hours the true labour-pains came on, and the labour took place without any further difficulty.

Death from Congestion.—The hip-bath was ordered on the following day to “draw down the bad-stuff” and strengthen the parts; in other words, to contract the uterus and promote the lochial discharge. The wet bandage was also applied to the abdomen. Whilst in the hip-bath the princess complained of pains in the region of the uterus, and re-action did not take place. The next day the bath was repeated for a longer period, in order that it might more certainly produce its derivative effects. The pain, on the contrary, became more pungent, the inflammation more intense, and spread rapidly; the lacteal secretion was entirely suppressed. On the following day the unfortunate princess died.

Priessnitz exonerated himself from all blame by declaring, as usual, that his orders had not been followed; that the bath

had not been taken sufficiently cold; that the water was warm, instead of being temperate; that it was 73° Fahrenheit, and not from 55° to 60°, as he had directed. In consequence of this, the “bad stuff” had been repelled, instead of being drawn out, or, in other words, the re-action had not taken place, and, therefore, no derivative effects were obtained.

I had no means of ascertaining whether this deviation from his directions as to the temperature of the bath had really taken place, but, amongst the numerous patients at Graefenberg, such was generally reported to have been the case, and to have occasioned death; and it is not the interest of the bath-attendants to contradict these statements. Yet, from the long time the princess had been under his care, the unlimited confidence reposed in him, and the punctilious precision with which, especially in cases of importance, his orders were usually obeyed, one would be inclined to doubt the truth of the assertion. The prince, deeply deploring the loss he had sustained, a few days afterwards quitted the environs of Graefenberg, but not without accusing Priessnitz of having been the cause of his sad bereavement, or, what may be considered to be the same thing, declaring that his injunctions had been strictly attended to.

Diarrhœa.—Death from Congestion.—A gentleman of fortune, about sixty, was attacked with diarrhœa whilst at Graefenberg; it was considered a “favourable crisis,” and continued to increase. To promote the “descent of the bad stuff,” he was ordered to remain in the hip-bath each time a full hour, and to repeat it every two hours. This was succeeded by evacuations of blood, which were pronounced also to be very favourable, and not to be checked. The explanation given was, that there were hemorrhoids seated high up, which produced all the mischief; but that now they had made their appearance, or “come down,” the “bad stuff” would soon be carried off, and then perfect health would ensue. In

about a week he died. On opening his body, the rectum and colon were found to be in a high state of inflammation, and the mucous membrane covered with a thick coat. I could not obtain a more circumstantial account of this case.

Asthma.—Death from Spasm.—A Prussian captain, aged about sixty, had been afflicted several years with this disease. It was stated, that Priessnitz did not “admit him to the cure,” that is, did not undertake to cure him, but said he might try the moist sheet, followed by the cold-bath. He, therefore, perspired in the moist sheet, and upon plunging into the cold-bath immediately afterwards, was a corpse within two minutes. It was reported, of course, to have been entirely his own fault, and no one else was in the least to blame.

Death from Suffocation.—A. Dzubo, a captain in the Austrian service, had been some months under treatment, when a “crisis” appeared in the form of a tumour in the throat. The abscess burst internally, and he instantly expired. This took place on the 17th of April, 1841. I could not get at the particulars of this case, either the nature of the disease, or whether the tumour was situated in one of the glands. It was described to me as having been in the middle of the throat, corresponding with the thyroid gland. It is an axiom at Graefenberg that Nature must be her own surgeon, as well as physician, in all such cases. Had the tumour been opened, in all probability this gentleman’s life would have been saved.

Syphilis.—Mr. P., an English gentleman, contracted this disease at Graefenberg.

Treatment.—Frequent immersion of the *glans penis* in cold water, and wet linen rags applied to the chancre, which, however, continued to spread, and in the course of a fortnight buboes appeared in both groins. The hip-bath was then

ordered, and wet bandages, or compresses, applied to the tumours. These daily became worse, and ultimately suppurated. Some time afterwards, secondary symptoms supervened, the throat became ulcerated, and nodes appeared on the forehead. Mr. P. then quitted Graefenberg to seek relief elsewhere.

This is an important case, which, having been taken at its very commencement, proves the inefficacy, or, at least, the uncertainty of the much-vaunted success of the "water cure" in this disease, to which Priessnitz is indebted for a considerable portion of his reputation.

Two-thirds of his patients are said to be syphilitic. Of these, almost every one has been over-dosed with mercury, and the majority of them suffer solely from that form of the disease, which, when the virus is destroyed, may be called mercurio-syphilitic, being the effects of mercury. Under the "water treatment" as practised at Graefenberg, it requires from six months to two or three years to cure these secondary symptoms. No doubt the progress of the cure is retarded by the quality of the food, and the too long and too frequent application of cold. As it is generally known, that abstaining a good deal from animal food and fermented liquors is effectual towards curing this disease, perhaps some of those suffering from it are indebted rather to the anti-phlogistic regimen of Graefenberg than to the treatment itself, for their recovery; yet many, after a prolonged stay, leave the place uncured. When I mentioned to Priessnitz that the disease might be cured by a strict attention to diet, without either medicine, or water used medicinally, he shrugged his shoulders, took some time to think of his reply, and then said, that such might sometimes be the case, but that water was the only certain and universal remedy.

The cure of syphilis, by a strict anti-phlogistic regimen, is not such a recent discovery as many may suppose. Dr. Cheyne, who wrote in 1720, relates, that he had "heard of a

famous sea-commander who effectually cured the first stages of *venereal* distempers by prescribing a twenty-days' diet of *water gruel* only, in which a little *cream* of *tartar* was at first dissolved; and higher degrees of the same disease, by the like diet, continued twice the time."

Mercurial disease. Mr. R——, a young Scotch gentleman, had contracted syphilis at Messina, two years previously to his visit to Graefenberg. Was treated by the Sicilian, and afterwards the Neapolitan physicians, with mercurial inunction, blue pills, and corrosive sublimate. This last preparation had been taken in such large quantities, by mistake, that it endangered his life, causing violent vomitings and colliquative diarrhœa. He became so extremely sensitive to the electrical changes of the atmosphere, that he assured me, he could not only predict rain, but could anticipate the approach of a cloud, and tell when it was passing over him, though blindfolded. His friends frequently made this experiment upon him. He had suffered from a mercurial eruption, and pains in the head, joints, and spine; ulcerated sore throat, loss of appetite, and extreme emaciation. The English medical practitioner at Naples afterwards cured him of the secondary symptoms with the hydriodate of potass, and the compound decoction of sarsaparilla. But, the pains in his head and joints, loss of appetite, debility, and emaciation, continued, combined with an hysterical affection, that caused him frequently to shed involuntary tears. He was persuaded to consult Preissnitz, and went through the entire *curriculum* of the "cure." The "douche" produced much feverish excitement, followed by an erithematoid, or mercurial eruption, accompanied with several boils, not venereal ulcers. Sweating in a blanket promoted the discharge of the mercury accumulated in his system. In four months he was perfectly restored to health, regained his strength, flesh, and appetite, which last was by no means inconsiderable. He frequently

walked twenty or thirty miles a-day, and was free from every pain. This was the best and most complete cure that fell under my observation.

Hepatitis. Dismissal.—Dr. Bulard, a French surgeon and physician, two years before he came to Graefenberg, had been attacked by a severe intermittent fever in the Morea, which was cut short by very large and frequently repeated doses of quinine. The disease being thus stopped in its progress, and imperfectly cured, the peccant matter was said to have been thrown upon the liver. Be this as it may, congestion of that organ took place, — a frequent result of fever. Enlargement succeeded, attended with ascites, which Priessnitz undertook to cure.

Treatment.—The moist sheet, followed by friction in the half-bath, the hip-bath and a broad heating bandage, covering the whole of the abdomen, were the means adopted. At first, the general health was improved, and, it was said, the abdomen diminished in size. This treatment went on for three or four months, when a diarrhœa took place. Priessnitz rubbed his hands for joy, declaring it was a most “favourable crisis,” and that in a short time he would be well. Dr. B—— shook his head, told him he had formerly experienced such a crisis, and afterwards became a great deal worse. He proved the better prophet of the two. The abdomen increased in size, and the disease became rapidly worse. Two or three days afterwards, Priessnitz discovered that the bandage had not been sufficiently broad, nor the hip-bath sufficiently cold. As his orders had not been obeyed he would no longer be responsible for the cure. This was immediately bruited about. Every one was astonished at the doctor’s obstinacy, not allowing himself to be cured, but using a narrow bandage and a tepid bath, instead of a broad one and a cold bath. It was such presumptuous folly, when everything was going on so favourably, to pretend to know better

than Priessnitz. My irritable travelling companion declared, that he deserved to die, and that it was quite right to have nothing more to do with him.

In vain the doctor asserted that he had obeyed the orders; Priessnitz himself had caught him in *flagrante delicto*. The cold water would have drawn down the "bad stuff," as was proved by the diarrhœa. The tepid water, on the contrary, drove it back, as every one knew. All entreaties were in vain; Priessnitz was inexorable. It was not prudent, as before observed, that any one should be permitted to die at Graefenberg, if it could be avoided, especially a man like Dr. Bulard, who had been acting in the commission for settling the laws of quarantine, and was emblazoned with the decorations of France, Russia, Austria, and Turkey—and this, too, so soon after the death of poor Miss S. S.—however no one liked to be the bearer of the death-warrant for him to depart. At length another Frenchman undertook the disagreeable task. He consequently left for Dresden, where he died about four months afterwards.

This case came under my own immediate observation, and the impression on my mind was, that Priessnitz picked a quarrel with Dr. Bulard in order to get rid of him, lest his reputation for infallibility should be impaired, after having decidedly undertaken his cure.

Gout and Mercurial Syphilis.—His Serene Highness the Prince Nassau. This nobleman, the uncle of the reigning Duke of Nassau, and formerly colonel proprietor of an Austrian regiment, had, through intemperance, become a complete martyr to these two diseases. I was informed that his spine was affected, so that he was obliged almost constantly to lie in bed, and that he was covered from head to foot with venereal nodes and ulcers. No longer able to perform his military duties, he had resigned his regiment, and placed himself under the care of Priessnitz. He remained in the neigh-

bourhood of Graefenberg for the long space of four years, under treatment, and was ultimately cured, although still walking with a considerable stoop, and some degree of lameness.

At Graefenberg he became acquainted with a lady, whom he married. Now, mark the sequel! Not a month passed over before a most violent fit of the gout broke out. I could not ascertain whether the prince had relapsed into his former habits, or whether it was simply the effect of marriage that elicited the disease. Either might have done so; but, if the latter, then the "water cure" cannot be a preservative against the gout, which, it is said, is the case, provided the patient adheres strictly to the prescribed regimen. As it does not, however, destroy the gouty diathesis, or predisposition, the patient must not commit any excess, or infraction of the rules, but observe the precept of Horace—

"Cave, ne titubes, mardataque frangas."

Skin-Disease; Gravel; Great Nervous Irritability.—Mr. H. H——, aged about sixty, of a bilious complexion, spare habit, great mobility of the nervous system, volubility of speech, accompanied with gesticulation, violent action of the muscles of the face, a restless staring of the eye; walking with long and rapid strides, eyes fixed on the ground, as if in deep meditation; great despondency—so great that he said it was not in the power of language to describe his painful sensations; that life was insupportable, and, had it not been for a sense of duty, moral and religious, he would gladly have put a period to his miserable existence. Had for the last eight or ten years been afflicted with gravel, accompanied with pains in the loins and hip-joint. Was also suffering from a skin-disease, consisting of furfuraceous scales, sores, and scabs, discharging a fetid greenish matter, and attended with much itching, especially whilst in bed. Watchfulness.

This patient had formerly been in our civil service in

India, but, being incapable of close application, or the steady pursuit of an object, he was compelled to resign his appointment. He had tried various remedies. Mercury and sarsaparilla produced no good effect. Warm sulphuretted baths seemed to increase the nervous irritability, and were, therefore, abandoned.

Treatment. First fortnight.—Moist sheet twice a day, followed by friction in the half-bath, at 60° Fahrenheit, in the morning, and a dripping sheet in the afternoon. A hip-bath at eleven in the forenoon, with the dripping-sheet. Wet bandage constantly worn round the abdomen. Third week.—The moist sheet omitted every other morning, and sweating in the blanket used in its stead, followed at first by the half-bath, and afterwards by the plunging-bath.

One morning, he remained too long in the cold plunging-bath, which, at that season of the year, November, the weather being frosty, was about 36° or 40° Fahrenheit. In vain Frantz, the bath-attendant, cried out, “Goot! goot!” Poor Mr. H. H—— fancied that the exclamations meant “Good! good! Persevere! persevere!” instead of “Enough! enough!” He therefore continued until he could no longer endure the piercing cold. On getting out, he staggered and fell down. The remainder of the day, he suffered from intense head-ache, which did not entirely leave him for several days. He was, therefore, ordered to encircle his head with a wet bandage. In consequence of this accident, the sweating and cold plunging-bath were discontinued, and the former treatment returned to.

Whilst travelling with this gentleman, I had made up my mind to be in some measure guided in my judgment of the “water cure” from its operation in his case, which I considered a bad one, of long standing, but in every respect suited for the trial. Mr. H. H—— described the effects of the moist sheet as most soothing; so much so, that he declared he could remain in it for ever; it seemed as if he were in Paradise;

and he quitted it with extreme reluctance. He had never, he said, experienced such ease, comfort, and delightful sensations; adding, that it acted upon him like a charm,—that, whilst in it, he could fancy himself free from every complaint. Such were its sedative effects, that he had not been at Graefenberg a week before the beneficial results were most evident. The expression of his eye and countenance became tranquil; his speech, walk, and general manners, comparatively calm and sedate. I confess that I was myself quite astonished at the change which had so rapidly ensued, insomuch that it occurred to me what a useful remedy the moist sheet might become in our own lunatic asylums. The wet bandage also relieved the pain in the kidnies, and, in less than a month, he was perfectly free from the gravel.

Having taken some dislike to me, or, perhaps, distrust at my not having revealed to him my profession, I scarcely saw this gentleman after I left Graefenberg for Friewaldau, except two or three times in the apartments of my friend, Captain W., when he conversed with me as if an entire stranger, apparently under great constraint. His countenance had then resumed much of its original expression, accompanied with the peculiar restlessness of the eyes; and, upon inquiry, I was informed, that he had again become irritable and irascible about trifles, and most susceptible of offence.

This interesting case tended to confirm my opinion, that the “water treatment” produces its most marked effects during the first month; and that afterwards, the disease is more or less stationary, and sometimes a relapse gradually comes on. That it should be so, is in perfect accordance with the general law of physical agents on the animal economy, when long continued. Either the system accommodates itself to the circumstances under which it is placed, whence the proverb, “use is a second nature,” or those circumstances induce disease. Thus with the “water treatment,”—as a stimulant or counter-irritant, it may overcome the diseased action,—and, as

a sedative, it may diminish and allay that action. But if within a stated period, nature cannot effect a cure, the treatment should be suspended or relaxed, in order to allow her time for repose, as spontaneously takes place in the law of "crisis."

Chronic dysentery.—Captain Wolff, aged about forty, middle size, muscular system well developed, sanguine temperament. Complained of a sense of heat in the crown of the head, sometimes cephalalgia, dimness of sight, *muscae volitantes*, and slight vertigo. The cheeks and the nose inflamed. Habitual constipation, alvine evacuations, scybalous mixed with slime and caseiform matter, of a brownish colour, at times slightly tinged with blood. Had been thus afflicted several years. About two years previously was entirely deprived of sight for three days. This gentleman was under treatment nine months, and left at the same time with myself.

On his arrival, Priessnitz examined him in the following manner. First, had him rubbed down with a wet sheet, then rubbed him dry; afterwards put him into a cold bath, then into a warm one, alternating them several times in quick succession. Each time on coming out of the cold bath, the skin assumed a deep crimson colour, and when out of the warm bath, was perfectly white. At length, observing that on coming out of the cold bath, a white spot appeared, about the size of the hand, over the *sacrum*, where the reaction did not take place, he pronounced his disease to be that of *hæmorrhoids*, which had not yet descended or become apparent; and, having learnt that the captain's father had been subject to this disease, he further declared it was hereditary, and readily undertook to cure it.

The *Treatment*, at the commencement, was as usual,—the moist sheet, half-bath, dripping-sheet, and hip-bath. Bandages round the abdomen and legs. This was continued with little variation for the first three or four months, when sweating, the plunging bath, and the douche were added.

In short, he went through the entire course with occasional variations. An enthusiastic admirer of Priessnitz, and of a sanguine temperament, he felt confident of success as soon as he was "admitted to the cure." It was in vain I represented to him, that his complaint could not fail to be aggravated. One day, entering my apartment, radiant with joy, he announced that the "bad stuff" was at last "drawn down," for that he had evacuated a large quantity of slime mixed with cheese-like matter. I could not even then convince him, that this was the effect of the cold hip-bath repelling the blood towards the intestines, and thus causing congestion, and increasing the malady.

Captain W. pursued the directions given him with indefatigable assiduity, rising in the depth of winter at three in the morning to be enveloped in the moist sheet, taking the cold plunging bath immediately afterwards; then the "douche" at twelve, and, in the afternoon, the moist sheet again, and the hip-bath and dripping-sheet twice a day. He constantly consulted Priessnitz, and scrupulously followed his advice. Moreover, he diligently studied the effects produced on others, and collected a great number of cases. So sanguine and enthusiastic was this gentleman, that he regarded Priessnitz, at one time, as something almost divine. Unable, however, to boast of having received any benefit, he was yet unwilling to admit that it had done him any harm; notwithstanding his servant assured me, that his health was much better at the time he came to Graefenberg. Since my return to England I have received a letter containing the following remarks:—

" What further effects has the "water cure" produced on your constitution? As for me, alas, it has not yet obtained the wished-for success, I am almost always in the same condition, suffering still from dyspepsia, the "mouches volantes," and everything else, the same as before. You were indeed a true, but, to me, ill-omened prophet!

We Germans like novelties, but only persevere with them when they are founded on a sound system, and supported by substantial arguments. Therefore, the allopathic doctrine will maintain its ground. It seems to me like the Christian religion, which, in spite of various sects, will always hold itself upright, its principles being unshakably true and just. . . . That Doctor Bulard died at Dresden on the 12th of March, will be made known to you by the Universal Gazette. You prophesied his sure and early death."

Captain W. enjoyed, deservedly, much popularity at Graefenberg. He is a gentleman of the most amiable and accomplished manners, well versed in literature, and imbued with science, having been formerly an officer of engineers. He was the principal member of the committee of management at Graefenberg—the "arbiter elegantiarum" of their balls and fêtes, and intimately acquainted with every patient of distinction seeking relief from the "water cure," alas, no cure for him!

However efficacious the treatment and regimen may be in many instances, his case alone will sufficiently expose the absurdity of calling it an universal remedy, capable of superseding the use of medicine. Useful, judiciously administered, it might have been, in this and many other unsuccessful cases, and advantageously combined with medicinal remedies. It is its misapplication, as with Miss S. S., &c., which tends to bring it into disrepute; and those, who empirically extol its virtues, and affect to deride all other means, contribute not a little to this end.

Gout. My own case.—I arrived at Graefenberg on Tuesday, 18th October, 1842, aged 52. Had been subject to gout at intervals for the last ten years, and the fits seemed to have been influenced by moral as well as by physical causes. Two years before, a severe attack in both feet and knees had been brought on from exposure to wet and cold

on horseback. Since then, I had constantly suffered from slight rheumatic pains. A good appetite, but moderate in the use of drink. Inclined to fat, especially about the abdomen; muscles small, weak, and lax. Fair complexion; sanguine temperament. Skin, dry and somewhat harsh, hot or cold, never soft and moist. Frequent cramps in the thighs, legs, and latterly in the soles of the feet. Nights restless, sleep not refreshing. Pulse contracted, hard, from 70 to 80; perfect intermissions every 15th or 18th pulsation, imperfect ones every 5th or 6th. Suspected an organic disease of the heart, which throbbed and laboured. Palpitation, shortness of breath, profuse perspiration, exhaustion after a little muscular exertion. It seemed as if the gouty matter had, since the last attack, been accumulating in the system, without there being sufficient strength of constitution to throw it into the extremities, or bring on the paroxysm. The weather was open and fine, the mountains covered with snow, the nights frosty, the air keen, cold, and penetrating.

Treatment. Wednesday, 19th. At five in the morning I was enveloped in the moist sheet. The sensation of cold was at first so intense, that it seemed as if I was packed in ice and snow. A quivering of the muscles and chattering of the teeth came on, similar to that which is experienced in a fit of the ague. In two or three minutes, this sensation passed away, the heat of the body having gradually created a sort of vapour bath, when I was somewhat reconciled to my new situation. My pulse was rapidly brought down to 60, and did not afterwards rise above 66. In three quarters of an hour, the bath-attendant, Frantz, came and found me in a slight perspiration, when I got up and was washed for two or three minutes in the half-bath, the extreme chill of the water having been taken off so as to bring it to about 50° or 55° Fahrenheit. At eleven I was rubbed down with the wet sheet, which was succeeded by a

foot-bath, for ten or fifteen minutes, of extremely cold water, about two inches in depth. The effect of the cold on the soles of the feet was such that I could scarcely endure it, and the feet became of a bright crimson hue. At five in the afternoon, the treatment was repeated, the moist sheet for an hour, and then the half-bath.

Next day, the hip-bath was substituted for the foot-bath. This was also intensely cold, causing a stinging, tingling sensation, as if the points of innumerable fine needles were everywhere penetrating the skin as it came into contact with the water. The same bright crimson colour appeared as before. This sensation, together with the look of the skin, were deemed highly propitious. Such was the course of treatment I underwent, without much deviation, during the first week. I could not become reconciled to the moist sheet; it frequently brought down my pulse to 50; hence, I sometimes shirked it in the afternoon, and used instead the hip-bath, and friction with the dripping sheet. I had a great inclination for a sweat in the blanket.

Second week. Having, through Frantz, communicated to Priessnitz my wish to be sweated, he readily consented to it. The blanket was therefore brought into operation every alternate morning, and, on the other mornings, the moist sheet as before. Over me were placed two light feather beds, closely fastened down with two or three small sheets. My situation was not so very uncomfortable. The perspiration did not make its appearance under two or three hours; and, after I had sweated profusely a full hour, I was uncovered and got up. In this state, perspiring at every pore and with the blanket folded round me, I had to walk between thirty and forty yards, along an open passage, exposed to the wind and weather, which at the time was cold and frosty, to the bath-room, or shed: for a moment I paused when there, but, every moment was precious, and there was no retreat; therefore, quickly throwing off the

blanket, in I went, headlong, into a large tub or vat of ice-cold water, and was not a little surprised at the agreeable sensations I experienced. If the moist sheet had acted as a charm on my travelling companion, this was to me as a touch of the enchanter's wand. All sense of debility or lassitude, occasioned by the previous sweating, vanished at the instant my body came in contact with the water, and as suddenly was a feeling of strength and vigour imparted to my whole frame. I remained in the bath, rubbing myself and moving about, from thirty seconds to a minute, until the second impression of cold, or a shiver, came over me, which sooner or later takes place in every case. I then got out, was rubbed down with a dry sheet, and immediately returned to my room to dress. The reaction took place most perfectly, so that I felt refreshed, light, and elastic. All over my body the skin assumed a healthy glow, was warm, and slightly tingling. Having quickly dressed myself, I took a long walk, and drank from five to seven large tumblers of cold water (fifteen or twenty of the drinking glasses in use at Graefenberg), before taking my breakfast. The other portions of my treatment were continued as before, with the addition of a wet bandage round my middle, and, during the night, bandages also to the knee and ankle-joint of my left leg. These bandages were not applied continually, lest, as Priessnitz observed, they should bring out a "crisis," in which case my stay at Graefenberg would be protracted beyond the time I proposed to remain. I generally shirked the moist sheet in the afternoon.

The hip-bath brought on a considerable inflammation of the skin, particularly on the inside of the thighs, where it became thickened, and of a bluish purple colour. A considerable exudation also took place whilst sitting in the hip-bath, giving the water a turbid and whey-like appearance. At the end of the second week, my pulse had become quite natural, full, and soft, and, to my great satisfaction, entirely

ceased to intermit. I constantly drank from fifteen to twenty large tumblers of cold water during the day.

The more profuse the perspiration, the more refreshing was the cold bath, and the more certain and complete the reaction it produced, provided I did not remain in it too long. On one occasion, I went into the plunging bath after perspiring only a very little in the moist sheet, when the reaction did not take place at all; the consequence of which was, that I was chilly the whole of the day, with head-ache and sneezing, and at night I was feverish. In short, I had caught cold. A good sweat in the blanket, however, the following morning, carried off all these symptoms. On another occasion, whilst perspiring pretty freely from a long walk, Frantz directed me to strip, and immediately threw over me the dripping sheet. This treatment might seem calculated to produce dangerous consequences: such, however, was not the case; on the contrary, it was highly refreshing—the sudden shock as suddenly passed off and was succeeded by an agreeable reaction. It may be noticed, that coach-masters treat their horses in a similar manner, by having cold water thrown over them when in a heated condition.

I did not purpose remaining more than a month to try the effect of the “water cure,” but fate ordained it otherwise. On Saturday, November 4th, whilst plunging into the bath, my left foot got entangled in the blanket, which brought both my thighs, and especially my left one, forcibly across the edge of the tub, with all the *momentum* my body had acquired by being precipitated into the water. Had the bone been broken, my situation would have been truly pitiable; without a friend, ignorant of the language, in the depth of winter, and far from England, in a place where there was no surgeon of any skill, nor any of the necessary apparatus for a broken limb. The contused part became instantly painful and tense, as if a cord were bound tightly

round it. At dinner I spoke of the accident I had met with, and of my intention to apply an "umschlag," or wet bandage to the part. "You must not do so without consulting Priessnitz," observed my opposite neighbour. "Why? Madam," said I, "I am sure he will approve of it; but, to please you, I will consult him." On doing so, his direction was, that I should apply the "umschlag" forthwith, and repeat it, without intermission, until the pain ceased. At night, unable to walk, I put on the bandage; and, in the morning, the pain had abated, the hardness, swelling, and inflammation of the muscles and their fascia, had almost subsided, so that I felt able to walk, but preferred lying in bed all day, and going without my dinner.

On the following day, Monday, I removed to Friewaldau, into the same house with Herr Richanech, the person to whom I have before alluded. The heating-bandage produced a violent inflammation of the skin, as if a metastasis had taken place, which seemed to be the case. Herr Richanech advised my continuing the hip-bath three times a day, with ice-cold water, and bandaging both thighs. This greatly provoked the inflammation and thickening of the skin, especially on the inside. The left thigh became tense and painful; the skin rigid, and of a deep purple hue. The viscid exudation both on the bandages and in the hip-bath, was to me most surprising, coating the linen with a dark brown stain, and rendering the water turbid and full of flocculi. As this operation was repeated three times a day, the quantity exuded during the fortnight I continued it must have amounted to several pounds weight; and the swelling had so increased, that, being unable either to stand or sit, I was compelled to remain the whole time in a recumbent position.

Still did my new doctor, Richanech, advise the continuance of these means, viz. the cold hip-bath, leg-bath, and wet bandages; saying, that the "crisis" would pass off in

a few days, and that, as the "bad stuff" was being drawn down, it would be dangerous to repel it with warm or tepid baths; that the copious discharge was an indication of a speedy and complete recovery. But, the inflammation of the skin increased, and with it the swelling of the limb, which had now become four inches larger in circumference than the other. Even this was deemed favourable, as tending to drain every particle of "bad stuff" from my body. The pain, however, was daily becoming more and more severe, and the weight and stiffness of the limb such that I could scarcely move or drag it after me.

My kind friend, Captain W., seeing me in this woful plight—in an uncomfortable room, vaulted over with stone like a cellar, and equally cold and damp, immediately procured for me some other lodgings (those in which Miss S. S. died), and got me removed into them; he then sent to Graefenberg for a sweating-blanket, and caused me to be thrown into a profuse perspiration, in order to moderate the severity of the "crisis." By these means, the pain and violence of the inflammation were speedily removed. Herr Richanech was totally ignorant of the effect which would result from this, although he afterwards said that he had mentioned it to me, and exonerated himself from all blame by pretending that I had taken my own course (God knows I was too ill to think or act for myself!) and would not follow his directions; so far from which, I was daily and hourly asking what he could do to mitigate my sufferings.

I was now sweated every morning, with good effect; then rubbed with temperate water in the half-bath, and afterwards half-enveloped in wet bandages, Captain W. humanely superintending the operations. As the inflammation of the skin subsided, I found that a very considerable effusion had taken place in the subjacent cellular membrane, which, together with the discoloration, gradually descended into the leg. At length, the effused lymph reached the foot,

which then became swollen, and was attended with a severe aching pain, the precursor of gout. Again, I was unable to walk across the room, and compelled to resume my reclining posture. A wet bandage was now applied to the foot and leg, to promote the absorption of the effused fluid. On the following day, Sunday, November 27, the gout fully declared itself. The wet bandage had caused a vesicular eruption and inflammation of the skin, and, without doubt, brought on the disease, which now proceeded rapidly, and with excruciating pain. I felt as if my bones were being crushed and ground between two millstones. I did not, however, as on former occasions, experience that burning heat in the articulation of the great toe, as though a drop of molten lead were boiling and hissing in the joint, or as if it were being rended and riven asunder with wedges of red-hot iron. The burning heat was located in, or drawn to the skin. The left knee was also attacked, and became enlarged, very painful, and not admitting of the slightest motion. I also suffered much pain in the loins, especially about the left kidney. In this state, too intently occupied with my sufferings, sleep was banished from my eyes. My kind friend proposed to sit up with me, which I could not permit. The night was, therefore, passed in solitude, and its stillness only broken by my half-suppressed sighs and groans. The next day Priessnitz was consulted.

Priessnitz's Advice during my first Fit of the Gout.—Early in the morning a sweat in the blanket for two hours; then well rubbed for half an hour in the half-bath at about 60° Fahrenheit. In the evening, perspiring in two moist sheets,—in the first for fifteen, in the second for thirty minutes,—then rubbed as before in the demi-bath for half an hour. The moist sheet, instead of the blanket, on the morning of the second and every alternate day. Wet bandages to every part where pain was felt.

These orders were most strictly complied with, notwithstanding the half hour in the cold bath seemed of eternal duration, and the effect of the cold such as to occasion a sensation of torpor and fatigue. When rubbed dry, I experienced no cold at the instant, but after being covered up in bed, all its intensity returned. So thoroughly had it abstracted every particle of warmth from my body, that it seemed as if I never should be warm again; and thus I lay shivering and shaking for at least a couple of hours. It was, however, the means of suppressing the fever, alleviating the pain, and procuring me a comfortable, sound, and refreshing sleep, out of which I was roused next morning, to be placed between a couple of moist sheets. The wet bandages had removed the pain from the kidneys. Two years previously, while under an attack of the gout, I took, in one night, four hundred drops of laudanum, without their producing the least effect. On a former occasion, I had taken the same quantity of the *black drop*, *Bateman's liquor sedativa*, and other powerful medicines. The pain, or the gout itself, protects the system from the influence of opium, or any of its preparations. I believe, whilst suffering under the paroxysms of this disease, I could have swallowed an ounce or two of these tinctures, without feeling any other inconvenience than that of slight stupor. Hence we may infer, that the sedative effects of cold very much surpass those of opium, or perhaps of any other known remedy.

In a day or two Priessnitz paid me a visit, and told Capt. Wolff, that the more strictly I adhered to his rules, and the longer I remained in the bath, the more speedily I should get well, and be able to start on my journey homeward.

Saturday, 10th December.—The swelling of the knee and foot had now greatly subsided, so that, with a stick, I could just manage to hobble across the room. For some days past, I had felt a slight aching pain on the crown of the cap of the

right knee, and a vesicular eruption began to make its appearance on the instep of the right foot, burning, blistering, and excoriating the part, and staining the linen of a yellowish brown colour. This, I have little doubt, was the acrid matter of the gout, which was then drawn to the surface, and was attended with precisely the same description of red-hot burning heat I used to suffer, in former attacks, in the articulation of the toe. Small pieces of old linen, wrung out of cold water, and bound over with dry bandages, were applied to the foot and knee. The eruption, or "crisis," rapidly spread wherever the bandages were placed, and the parts became greatly swollen. The pain, on the slightest motion, was so great, that once I could not bear being lifted from the bed into the bath. Priessnitz was again consulted, and paid another visit.

Priessnitz's Advice on his Second Visit, as delivered to Capt. Wolff.—"As long as the pain is so violent, Dr. G. will lie every morning and afternoon in the moist sheet, which will be changed every hour and a half, and he is to remain in it as long as he can. After the moist sheet, he will be put into the demi-bath, at about 60° Fahrenheit, and then rubbed for half an hour, or as much longer as he can endure the cold. The longer he remains in the bath, and the greater degree of cold and shivering he experiences, the more salutary will be the effect. The parts suffering from the gout are not to be enclosed within the moist sheet, lest the pain should be increased by the heat and pressure of the bed-clothes, and that the bandages may be the more readily changed when they become hot. When the changing of the bandages causes much pain, moistening them with cold water will refresh the parts."

I was now sadly reduced by the disease, by the severity of the treatment, and by my great abstinence,—my food consisting merely of a small quantity of bread and milk, and, at dinner, a sort of hasty pudding. The frequent application of

the moist sheet, during the first attack, had reduced my pulse, whilst I was in it, generally to 53, sometimes to 48. I had a short, dry, hard cough; sneezing, and a constant singing in my ears, resembling the chirping of birds, which last effect I have not even yet entirely got rid of. Under these circumstances, and as the moist sheet was not imperative, I resolved to abstain from its further use. In vain my friend, Capt. Wolff, urged me to continue it; my reply was, that if I did, he would have to lay me by the side of poor Miss S. S.; therefore, instead of the moist sheet, I was enveloped every day, from six to seven or eight hours, in the blanket, and then rubbed for half an hour in the bath, at 55° or 60° Fahrenheit.

Upon one occasion, during this relapse, Priessnitz visited me whilst in the bath, and afterwards told Capt. W. that I had good blood, a strong constitution, but a delicate and tender skin. He then added, "you may now tell your friend, Dr. G., that he will never have the gout again, which would not be the case had he taken his own poisonous drugs."

Having now adopted the sweating system, I was disposed, by way of experiment, to unite with it the other part of Schrott's practice,*—viz. to pass one entire day without eating or drinking, and afterwards to eat and drink but very sparingly for several days, limiting myself to two small rolls and one glass of water. On the second day, under this regimen, there was, in the urine, a very copious deposit of a yellowish colour, tinged with pink, and a large quantity of uric acid, crystallized in brilliant vermillion flakes. This was continued in smaller quantities for several successive days. No deposit of this kind had previously taken place, the urine having always been of a pale colour, without even coating the vessel with the pink sediment, so usual during the paroxysm of gout.

* This practice is described a few pages on.

Each fit appeared to go through its natural course, and lasted about a fortnight. A week of exacerbation, and a week of decline. My body became, at length, so sensitive to the sedative influence of cold water, that even the drinking of a tumbler of it immediately reduced my pulse; and such was the effect of the frequent application of the moist sheet during my first attack,—so listless and languid did I feel whilst lying in it, that it seemed to me as though it would have been an easy thing to die. The skin of my knees, legs and feet, was converted into a species of mucous membrane, abounding with numerous papillæ, from which a copious exudation poured forth, so that the pieces of white linen wrapped round them were, more or less, changed to a yellowish brown colour. The odour that was emitted varied, being sometimes impregnated with *urea*, at others slightly acid, but more frequently resembling the smell of boiled cabbage; my bath-attendant said it was like sour krout.

After the subsiding of this second attack, the “crisis,” as it was called, still continued. I was unable to stand, partly from general debility, and partly from the weakness, swelling, and tenderness of the joints. Priessnitz, on being consulted, said that this arose, not from the gout, but from some other disease, the “bad stuff” of which was making its escape; and that, when it had done so, I should be perfectly exempted from every disease.

My friend, Capt. Wolff, being now on the eve of his departure, and, dreading to be left where I was, I determined to make an effort to depart also. The chaise was ordered; with difficulty I got on my clothes; but, when my friend arrived, he found that I could not stand. Capt. Wolff humanely deferred his journey on my account. The gout had once more returned, exactly at the insertion of the tendon into the heel of either foot. During the day it shifted, getting round towards the toe of the right foot, and passing through the ankle-joint of the left. The next day, New

Year's Day, I remained in the blanket from six in the morning until two in the afternoon, and the same the following day. Fortunately, this attack was of short continuance, for on Tuesday I was sufficiently recovered to be able to stand. The chaise again drove to the door, and, supported by my two friends, I quitted my chamber, where I had been confined, almost entirely to my bed, for five long weeks. My legs and knees were covered with wet bandages, and enclosed in a pair of large cloth boots, made expressly for the occasion; and, wrapped in my sweating blanket, I thus, in the depth of winter, commenced my journey of a thousand miles. Captains Wolff and Modler accompanied me the first stage, where I parted from these worthy and inestimable gentlemen, with tears of gratitude in my eyes.

The frost had now set in with much severity, attended with a keen, piercing wind. At four the next morning, I started for Breslau, and arrived there about two in the afternoon. Shortly after my arrival at the inn, I was seized with a violent rigor, which lasted three or four hours. I ordered the stove in my bed-chamber to be heated, renewed the wet bandages, and got to bed. Towards evening, fever came on, accompanied with much heat, but no elevation of the pulse. Notwithstanding the fever, so completely was nature exhausted that I slept soundly throughout the night. On removing the bandages the next morning, my knee was swollen and considerably inflamed; and the linen cloths, which had been wrapt round it, smelt as strongly of urine as if they had been steeped in that fluid. I remained in bed all day; towards evening the fever had greatly abated, and the pulse was weak and slow. I passed another day at Breslau, confined to my room, and, on the following evening, started for Dresden, where I arrived in safety on the morning of the 8th.

Worn out with sickness and fatigue, I returned to the hotel which I had put up at previously to my journey to Graefen-

berg. As the bandages had not been renewed since I left Breslau, they had become perfectly dry, and my legs were thickly covered with a silvery scurf. Having bathed them, and replaced the bandages, I sent for my son, a boy eleven years old, whom I had placed here at school. On entering the room, and approaching toward me, he all at once stopped short, gazed in mute astonishment, and hesitated whether to advance or not; and, even after I had embraced him, his stedfast look was riveted upon me, until at last he burst into tears. Affected at this conduct of the child, my first impression was that he was unhappy at school, which drew from me the exclamation, that if such were the case he should return with me to England. "Why papa," he at length sobbed out, "you look so thin that I did not know you—I could not believe it was you." I relate this circumstance merely to show how altered I must have been in that short space of time, for my son not to have recognised me. He was not singular, however, in this respect, for it was the case with every one, even the domestics at the hotel. The change having taken place gradually, I was familiarized with it, and quite unconscious of the extent to which it had gone.

Two days afterwards, the gout declared itself in my left knee and foot, but with less violence than in the two preceding attacks, on which it seemed to have spent its force. Its continuance was the same as before,—a week of exacerbation, and a week of decline. My treatment was now confined to the wet bandages, the leg-bath of temperate water, the drinking of cold water, and a partial abstinence from animal food.

In about three weeks I started from Dresden, passed through Berlin, where I stopped some days, and then went by the post-coach to Hamburg. Having been two nights and a day confined in the coach, my legs had swollen into shapeless masses; but, regardless of all the inconvenience

produced by it, I set off the same night for Hull, and thence proceeded to London, without delay, where I arrived February the 10th.

I had not been at home more than three days before the gout came on again in both my feet and knees, but, as before, greatly subdued, although sufficient to prevent my moving about; so that I had four, or rather five distinct paroxysms of the disease in little more than three months, in spite of Priessnitz's prediction, that, after the second fit, I should never have it again.

The theory at Graefenberg, that the sweating process draws the "bad stuff" to the surface, and the subsequent application of cold fixes it there, and prevents it from receding, is manifestly absurd. The very reverse is the case. Bathing and rubbing with cold water for half an hour at a stretch, must have the effect of repelling the peccant matter into the system, and of preventing the exudation from taking place in any part but where the heating bandages are constantly applied. Nor, in any instance, was it seen to abridge the duration of the paroxysm, which went regularly through the stated period of a fortnight. My bath generally contained from six to ten gallons of water, varying from 55° to 60° Fahrenheit. The heat of the body of course raised the temperature proportionably to the quantity of water. I may repeat, that, in my own case, as, I believe, in most others, the utmost attention was paid to those parts of the treatment on which Priessnitz placed so much reliance—the assiduity and kindness of my friend Captain Wolff in seeing his directions punctually carried out, may be cited in proof of this. Often, whilst superintending these operations, in which he has even condescended to assist, when he thought the servants were treating the suffering parts too tenderly, although I was actually shouting with pain, would he playfully say, "*Ah ! criez, mon cher, cela vous fera du bien.*" Nor was I kept less strict with regard to diet. My food

was all prepared at my kind friend's table, and sent to me by his own servant, in exact accordance with the prescribed directions.

I have before remarked, that during the whole of my treatment under Priessnitz, and whilst I drank copiously of cold water, there was no pink sediment in the urine, so common in gout; but when I commenced the abstinence system, recommended by Schrott, and hereafter described, a considerable deposit took place, together with crystalized uric acid. Thus, when the secretory organs were in a state of comparative repose, the kidneys began to elaborate their critical secretion; but, before this, they had, it would seem, sufficient employment in secreting the excess of watery particles without being at all engaged with the morbid matter. This fact would lead to the conclusion, that the one operation interferes with the other; and that Schrott's treatment of this disease is so far the best of the two. I cannot otherwise account for the repeated attacks I subsequently experienced, than on the hypothesis of the gouty matter having been first set in motion, and then repelled into the system, by the too frequent and long-continued applications of cold; unless it be said, that from my debilitated condition, there was not vigour enough in the constitution to throw it off all at once.

Independently of the above-mentioned fact, it does not appear that drinking large quantities of cold water has the effect of separating and washing out the gouty particles from the system. We find that, in cold weather, when the cutaneous perspiration is more or less suppressed, a much larger quantity of urine is secreted; but that urine does not contain the same proportion of *urea* as when, in summer, a profuse perspiration is going on. There will be a difference of from one to eight. In cold weather, the kidneys perform in this respect the functions of the skin, by which means the superabundance of watery particles is carried off by

them, in conjunction with the lungs; and upon the same principle,—viz. a diminished action of the various organs,—that all animals have a greater tendency to accumulate fat in cold weather than in warm, the redundancy being then deposited in that form in the cellular membrane, and thus placed out of the system, instead of being carried off by the excretory vessels. So that fat is a kind of morbid accumulation, which, if retained in the blood, would become noxious and productive of disease. Hence, we may account for the beneficial effects of pure air, simple food, abstinence, and exercise. Every organ, under such circumstances, is brought into full play, and every excess, or redundancy, got rid of. The body is thus freed from impurity, and acquires a perfectly healthy state. Nothing that is noxious remains in the blood; and, therefore, no morbid accumulations are deposited either in the cellular membrane, or elsewhere. This effect is perfectly well known to those who are accustomed to train animals for great muscular exertions, where it is necessary to have them in the highest possible condition; and it is so self-evident, that it is needless to say anything more on the subject.

Perhaps the treatment of Vander Heyden, combined with that of Schrott, in cases of gout, with the addition of the wet bandages, is safer and more speedy in its operation during the paroxysms, than any other at present in use. The great objects to be kept in view are—to subdue the inflammation, and to expel the morbid or gouty matter from the system. Now, the constant application of cold, being effectual only to the first of these two objects, it should not be continued throughout the whole attack of the disease; nor should it extend to any other than the parts inflamed. Cold applications repel the morbid matter into the system, and drinking large quantities of cold water does not, as we have seen, facilitate its escape by the kidneys. This morbid, or gouty matter, consists of *urea* in some state or other of combination; such, for instance, as uric acid;

therefore the kidneys are its natural outlet from the system ; and, although other ways, as the sweating process, may be made available for its expulsion, still none can be so good as the natural one.

Priessnitz's General Rules for the Treatment of Gout during the Paroxysm.—Lying in two or three wet sheets consecutively, ten or fifteen minutes in each, according to the degree of fever or of animal heat, so that the sheets be changed when they become warm. On quitting the wet sheets, a demi-bath is to be taken, at about 60° or 65° Fahrenheit, from half an hour to an hour, dependent on the heat of the body. This is to be done just previous to going to bed. In the morning, sweating in a blanket and the demi-bath afterwards. Should there be much debility, the blanket is to be used only on alternate days ; the wet sheet every evening. Where the patient is strong and robust, the blanket may be had recourse to twice a day, and the half-bath an hour after each sweating. If there be much heat, or much fever, the friction in the demi-bath may be repeated at twelve o'clock. The foot-bath and hip-bath are not used during the paroxysm. The parts affected are enveloped in wet bandages, which are to be changed as often as they become hot and dry ; or, they may, from time to time, be moistened or wetted on the outside with cold water. Gout is not to be treated as a local disease, but as affecting the whole system. A rigid diet is to be observed during the paroxysm, animal food entirely abstained from, and generally but a moderate quantity of any taken.

Priessnitz's Rules to arrest an Attack of the Gout on its first Approach.—A demi-bath, with the chill off, for half or three quarters of an hour ; the body well rubbed, especially those parts of it in which the gout is seated ; but should they be too painful to admit of it, then friction is to be applied to the neighbouring parts. Friction with cold water every evening in the demi-bath, and continued until the sensation

of cold is succeeded by a warm glow. Sweating in a blanket for an hour, after which a wash in the demi-bath for a minute or two, and then a walk out if practicable.

This practice very much coincides with that anciently adopted at the celebrated cold-springs of Willowbridge. The long-continued friction with cold water has the effect of subduing the symptomatic fever and allaying the local irritation; whilst the copious perspiration that ensues indicates a complete reaction, and the subsequent washing takes away all lassitude and debility consequent upon it. It was on this principle that the Indian chief, as mentioned by Mr. Penn in his letter to Dr. Baynard, plunged into the river after having sweated most profusely in his hot air-bath; then passed again through the heated chamber or oven, wrapped himself up in his woollen mantle or blanket, laid himself down at full length near a long, but gentle, fire in the middle of his wigwam, and turned occasionally, until quite dry, that is, until the reaction was fully established. This treatment might be very effectual in cases of acute rheumatism.

The “universal water cure” not having been found quite so infallible as represented by its “apostle” and admirers, a man of the name Schrott, a retired serjeant-major from the Austrian service, imagined that an opposite system would be more successful, especially in cases where the drenching with cold water and cramming with coarse food had signally failed. Hence, he opened another “universal remedy establishment” at Lindewiesé, a small town in the vicinity of Graefenberg. His method of treatment is designated the “hunger-and-thirst system,” and consists principally, as its name implies, in abstaining from meat and drink, combined with profuse sweating.

Schrott's Treatment.—The patient is placed in three wet sheets, the first coming up only to the arm-pits, so that the feet and legs are well covered, each foot and leg separately,

the other two reaching to the neck, and the whole tightly folded in a blanket, with a feather-bed coverlet. The chamber is heated to about 80° Fahrenheit. When the perspiration is going on profusely, a window may be opened to let in the fresh air. The patient remains one, two, or three hours in this state, according to the strength of his constitution. When the coverings are removed, he is well rubbed with dry towels, and then returns to bed for an hour's repose. Afterwards, he washes his face and hands, dresses, slightly breaks his fast, and then takes a good walk.

Diet.—Water is almost entirely prohibited. The more the patient abstains from drink, the more rapid will be the cure. If he be feeble, he is allowed the eighth part of a pint of wine, mixed with an equal quantity of water, of which the half is taken at noon and the remainder in the evening. Milk and butter, two of the staple articles of food at Graefenberg, are strictly forbidden. The usual allowance of food is five small German rolls during the day. These are about half the size of an English penny-roll, and should be stale, at least three or four days old. In order that the patient may not be completely exhausted by this rigorous treatment, he is allowed every third, fourth, fifth, or sixth day, according to circumstances, a little soup, roast meat, and some wine.

The effect of this is, that, in the commencement, a copious sediment is thrown down with the urine, which, according to its quantity, indicates the progress of the cure. Towards the termination of the course, the urine becomes clear, and the deposit ceases. Whenever, under these circumstances, a violent diarrhoea supervenes, it is considered to be a critical sign, or crisis, and is attributed to the absorption which has taken place of the humidity of the wet sheets.

The treatment lasts about six weeks, and is divided into three periods, each consisting of a longer or shorter space of time, as regulated by circumstances. During the first period,

which is considered preparatory, and may last about a week, the quantity of nourishment is gradually diminished. During the second, which may be three or four weeks, it is pushed to the extreme point of hunger and thirst, or abstinence from meat and drink. During the third, which will be a week or two, it is gradually increased to the usual quantity of food taken when in health. All, however, depends upon the strength of the constitution, the intensity of the disease, and the progress of the cure. If one course of treatment be not sufficient to effect the cure, it has to be repeated, which may be the case several times. When any eruption, or "crisis," makes its appearance, *dry* bandages, instead of wet ones, are applied to the part.

It is observed, that, under this treatment, notwithstanding the small quantity of fluid taken into the system, there is not a corresponding diminution in the quantity of urine, the latter greatly exceeding the former. Like the "water cure," it is carried to the extreme, and indiscriminately applied to every case. About three months previous to my arrival, two patients were found dead whilst undergoing the sweating process—the one having been about ten, the other fourteen hours enveloped in the sheets and blankets.

Priessnitz, as a matter of course, looks down upon his antagonist with supreme contempt, declaring that in no instance does he accomplish a cure, but only drives the "bad stuff" back into the system, when the disease becomes aggravated, and returns with tenfold violence. For, the "bad stuff," says he, "being thus thrown into a heap, boils and ferments in the body, and speedily kills the patient." Schrott retorts upon Priessnitz by asserting flatly that he does not practise what he preaches, and is therefore an impostor; that he drinks wine in private, regularly takes his coffee after his bread-and-milk breakfast, and after dinner his glass of brandy; that the "water cure" is no discovery of his; and that when he accidentally cures a patient, it is by

sweating and exercise, and not by cold water. He then triumphantly appeals to numerous cases of gout, rheumatism, and other diseases, which had baffled all Priessnitz's pretended knowledge and insight into the human body, but which he himself had cured in a few weeks. After this manner do these rival "doctors" carry on the war.

The hunger-and-thirst system can never become so popular as the opposite one. People would much rather risk dying from a surfeit, even of such food as Graefenberg affords, than dying from starvation. The cravings of nature are not to be resisted. Hence it is, that there are so few patients at Lindewiesé in proportion to what there are at Graefenberg; and whenever a desertion occurs from the latter place, which is not unfrequent, not only is Schrott reviled as being a drunken sot, and a cheat, but the prayers of the good folks of Graefenberg are devoutly offered up, that the deserter himself may expiate his offence against the insulted "Genius of cold water" as he deserves to do. An occurrence of this kind happened during my sojourn at Graefenberg, when an Englishman after desertion placed himself under Schrott, and derived, at first, considerable benefit from the treatment; no sooner, however, had the third stage terminated, which restored him to an *ad libitum* diet, than he gorged himself to such an excess with that truly German dish, black-pudding and sour krout, which was washed down with some three or four bottles of sour German wine, than a relapse immediately took place. And no wonder. Schrott, as in duty bound, discarded him; upon which he wrote a penitential letter to Priessnitz, requesting to be re-admitted to the "water cure." The contents of this letter being made known, the first impression was, that Priessnitz would either spurn the renegade's petition, or treat him with silent contempt. Such, however, was not the case. He penned a most paternal answer, gently upbraiding him with a want of confidence, but saying that "he would at all

times open his arms with pleasure to receive him back into his establishment." This was considered a glorious proof not only of the one's magnanimity, but of the other's incapacity ! The truant returned, and his ready reception, to say the least of it, exhibited considerable tact and good policy, as tending to ingratiate Priessnitz in the eyes of the English.

It is reported that Professor Mondé wrote an eulogium on Schrott's practice, and gave a long list of cases of secondary syphilis and others, cured by sweating and abstinence, where bad food, and cold water, had failed of success. This interesting treatise he presented to Priessnitz, accompanied with the unpleasing alternative, that he would either publish it, or be paid two hundred ducats to suppress it; in which latter case he would write another in favour of the "water cure." Priessnitz was too good a judge of his own interest not to pay the money. The best modern work on the "water cure" is written by Mondé.

On reviewing the practice of Priessnitz, it is plainly perceptible, that his numerous failures proceed from a total ignorance of physiological and medical knowledge. Under a modified treatment, with the aid of medicine, more favourable results would be realized. Ingrassias, in his treatise "*De Aquæ Potu post Medecinam*," has, to a great extent, proved this assertion. Medicine, thus diluted, would be more readily disseminated through every part of the system, whilst the increased action of the skin and other secretory organs, under the influence of air, exercise, and diet, would greatly assist its operation. When any unfavourable symptoms manifested themselves, such as a tendency to congestion, a high degree of feverish excitement, or constipation, they would be immediately relieved, and the balance of the circulation properly adjusted. I have not the slightest doubt that the treatment admits, to a certain extent, of this union; but it is a weak and erroneous argument to contend that, because there is an uncertainty in the operation of medicine,

medicine is therefore utterly useless ; or that a patient is never cured by it, who, if left to the unassisted efforts of nature, would inevitably have perished. The following observation of Sir John Floyer on cold bathing is peculiarly applicable to the subject. " I find," says he, "*cold-baths* relieve the rheumatic pains by driving the humours stagnating in the limbs into the circulating vessels again, and that *by sweating afterwards* they are readily evacuated ; therefore I find that sweating is necessary in bathing for rheumatism. And I also observe that evacuations and alteratives are as necessary, as the disease indicates, as bathing, and, therefore, I believe *cold bathing* can never be made a quack medicine to be prescribed alone, nor be used for all diseases ; but according to physical indications in company with other medicines, and then they will perform great cures."

Whether the eruption of boils, so much relied upon at Graefenberg as the harbinger of health, are to be considered critical, or necessarily connected with the peccant humours of a previous disease, is a subject that requires some investigation. The sudden change of diet, the disuse of warm clothing, the frequent application of cold water to the surface of the body, and the large quantity of it drank, may alone be sufficient to account for their appearance. For similar reasons, children, especially those who, having been accustomed to warmth and a generous diet at home, are suddenly exposed to cold and a different diet at school, are subject to boils. In such instances, as with the "water treatment," the boils are ushered in with shivering and other symptoms of feverish excitement. The first that makes its appearance is generally larger and more painful than the rest, and is therefore termed the "mother boil." They are further considered healthy, as indicating a sufficient strength of constitution thus to throw out the bad humours, instead of suffering them to affect some important organ, as the lungs or abdominal viscera. For this reason, they may be said to be critical, as far as

relates to the sudden change of diet, &c., but not as being necessarily connected with the peccant matter of some previous disease; and hence it is that children generally enjoy better health after, than just before their eruption, the system having then become seasoned or accustomed to the altered state of things.

It may also be observed, that well-conditioned cattle, when suddenly turned upon scanty pasture, and exposed to cold and wet, are subject to similar eruptions, which unsophisticated country people rightly ascribe to the want of good keep impoverishing the blood and rendering it thin and watery. In this case, as with ourselves, these breakings-out are sometimes the step by which nature accommodates herself to the hasty transition imposed upon her. Nor will it follow, as a matter of course, that the vesicular eruptions caused by the action of the moist, or heating bandages, are in every case productive of benefit. That they are beneficial in local complaints, by opening a way in which the impurities of the blood may be more readily thrown off, has been fully proved. In my own case, this evidently took place to a considerable extent, and any one suffering from sore throat, pains in the joints, lumbago, or any other local disorder, may obtain speedy relief from them, without incurring the slightest risk.

In the present mode of treating disease, the doctrines of "crisis," and the humoral pathology, are almost wholly disregarded; but since the "water cure" rests its claim entirely upon these, I shall give them some consideration. This will necessarily lead me to debateable ground; but, by confining myself as much as possible to facts, and avoiding theories, I may, I think, arrive at a tolerably safe conclusion. It has been justly observed, that the best mode of acquiring a knowledge of disease is by being a passive spectator, watching its progress, and noting the changes, whether they may terminate in recovery or death. When disease is thus left to itself, it

will generally be found, that it assumes the simplest or least complicated form, and that nature manifests a marked though often unavailing effort to throw it off in some one particular direction. Should she succeed in doing so, the manner in which it is performed has been termed a "crisis." A knowledge of the way in which this is effected, is of the greatest utility to the physician, inasmuch as it often enables him to accomplish by art that which nature, unassisted, is unable to perform. The assistance rendered by him generally consists in stimulating and directing the vital energies towards some excretory organ; and, should the system be thus relieved, the evacuation is also designated "critical." And hence it is, that the greater part of the remedies employed, such as cathartics, diuretics, diaphoretics, &c., are necessarily of a stimulating character. In endeavouring to bring about this "crisis," nature usually selects but one path at a time, and the physician, as her servant, ought to cooperate with her. But nature, now-a-days, is by many considered as an old woman, incapable of helping herself, and therefore her admonitions are despised, her boundaries overstepped, and her indications disregarded; and so an attempt is made to go beyond, instead of following in her train. By this mode, an endeavour is made to force a cure, instead of enlisting her efforts in the cause; and thus it is that the vital powers are diverted to various points at once; as, for example, to the skin, the kidneys, and intestines, all of which are simultaneously stimulated to produce their own peculiar evacuations. Thus, nature is neither allowed to select her own path, nor yet to concentrate her powers on one point, but is so baffled by aiming at too much, that either nothing is done, or something worse than nothing. Meanwhile, the disease progresses, and being driven from its original simplicity by the confusion thus created, it becomes so complicated that it gives rise to a new train of symptoms, betokening a new disease. In this manner it is, that medicines, in their opera-

tions, are frequently made to counteract, instead of abetting the salutary efforts of nature.

There is no doubt that these critical evacuations take place oftener in acute than in chronic diseases, in which latter the *causa morbi* appears to be in a semi-dormant state, as Priessnitz calls it, and from which, he argues, it must be brought back to its original acute form before the "crisis" can be induced, or the cure effected. How far his assertion is correct, that every chronic disease was previously acute, is more than doubtful. That such is the case with many chronic diseases is readily admitted; but that there are many also, which, by accumulation, have arrived at the chronic form, without having ever been acute at all, is alike unquestionable.

Gouty matter will go on accumulating in the system until a paroxysm, or critical discharge, takes place; *i.e.* until nature makes that effort to relieve herself of it; and, if there be not sufficient energy left in the constitution to effect this, it must ultimately destroy life. It is a Graefenberg doctrine, that the feverish excitement, produced by the "water treatment," is the precursor of the "crisis" which is to carry off the disease; and the inflammation caused by the heating bandages is viewed in the same light. The state of the body during the intervals of the attacks is termed the chronic form, when the "bad stuff" is lying dormant; and the paroxysm the acute form, when it is being discharged.

That accumulated peccant matter occasions disease, and that it must be expelled the system before the patient can be cured, is in perfect accordance with the theory and observations of all the older physicians. In order to expel it, the vital energies, as before observed, must be stimulated or excited, by some means or other, to make a more than ordinary effort to force it into the excretory ducts. Now, the sudden application of cold to the surface of the body, has a powerfully stimulating effect; and the reaction, which takes place in consequence of it, frees the skin from

obstructions, and enables it to perform its proper functions ; by which means the digestive and other organs are less oppressed. Again, by profuse perspiration, the circulation of the blood is freely carried into the small exhalent vessels, with which the system abounds, and thus an opportunity is afforded for the escape of those impurities which were the cause of the disease. And lastly, every business occupation being for a time laid aside, and the patient diverted with the pleasing pursuit of health, the mind becomes cheerfully excited, and thus, in conjunction with good air, exercise, and a moderate diet, exerts a powerful influence also over the body.

In many diseases, there is a strong disposition on the part of nature to get rid of the morbid matter by the skin. This may be observed in several acute diseases, especially the exanthemata, in which the fever, caused by the irritation produced upon the nervous system by the imbibed miasma, was held to be expedient to bring about this salutary effect. According to the humoral pathology, the fever is necessarily a preliminary step towards maturing the "coction" of the humours, without which the expulsion of the miasma of the disease, or morbid matter, could not be accomplished. This "coction" was supposed to soften down the crudities or acidity of the peccant matter, so as to render it bland and consistent. Thus, in an ordinary cold or coryza, the first secretion and discharge from the nose, is a thin, aqueous, transparent, acrid lymph, which, although resembling water, is extremely irritating—blistering, excoriating and ulcerating the skin of the adjacent parts, wherever it may happen to come in contact with it. As the cold passes off, this discharge becomes more copious, consistent, and opaque, of a white, or yellowish-white colour, and perfectly bland. The same thing takes place in common boils or abscesses ; the peccant matter is first of all an acrid, aqueous lymph, exciting much pain and inflammation, which gradually

abates as the suppuration proceeds, or the "coction" is completed, and which is also indicated by the consistency it assumes;—hence, the expression is retained to the present day, that "laudable pus" should be "album, læve et equale."

There can be little doubt that, in the various exanthemata, the eruptive fever is caused by the morbid matter entering and irritating the system; and which is probably the case with every other description of fever, so that they may all be termed symptomatic; but, whether the fever be necessary for the "coction" or maturation of the morbid matter, or whether it constitute a part of the disease, is by no means so clear.

In a great many diseases, especially those in which the mucous membrane is the tissue principally affected, there is an evident tendency to throw off the morbid matter by the skin. Thus, in cases of indigestion causing urticaria, the skin becomes affected to the great relief of the digestive organs; and also, in typhus and other fevers, a cure is often spontaneously effected by a profuse sweat.

The doctrine of "crisis" and "critical days" has of late years fallen into undeserved neglect and disrepute, which, doubtless, is to be accounted for by the altered system in the practice of physic, particularly that part of it which has to do with the administering of more potent and complicated remedies, with more diversified intentions, than was formerly the case. Hence, a "crisis" either does not take place at all, or does so but very imperfectly, and the physician, who depends upon it now-a-days for success, is considered to be at least a century behind the times. It seems strange, however, that all the older physicians, from Hippocrates downwards, who were pretty accurate observers of nature, and whose descriptions of diseases are even now the best that we possess, should have laid such stress on the expediency of eliciting the "crisis," and watching the period at which it

takes place, had the doctrine been so utterly useless as many contend.

The theory of fever being necessary to promote the "coction," and thus cure the disease—mistaking the effect for the cause—was the great stumbling-block of the humoral pathology. As fevers frequently pass off of themselves by a profuse "critical" perspiration, so may eruptions and some cutaneous affections be the "critical" expulsions of other diseases. Nature, ever watchful in protecting the vital organs, wards off from them a fatal attack by diverting its course to some less susceptible part; perhaps, the secondary stage of syphilis, and that form of the disease which results from the abuse of mercury, are exemplifications of this. This notion is strengthened by the fact, that these diseases are cured more speedily in warm, than in cold weather; and that certain sudorifics, such as guaiacum or the *lignum sanctum*, sarsaparilla, and the celebrated Lisbon diet drink, were formerly held in high estimation by surgeons and physicians, in their treatment of them. A gentleman of my acquaintance, who has extensive practice in this disease, recommends his patients to remain in bed whilst under the influence of mercury for the cure of secondary symptoms, and to drink daily three or four quarts of weak broth; and for a similar reason it was, that when the mode of administering mercury was very little understood, desperate cases were sent off to Montpellier, where the physicians had acquired a considerable reputation for the cure of this disease,—the air being pure, dry and warm, greatly promoted the action of the skin.

The operations of nature are simple and uniform. The ways in which she disembarrasses herself, are limited, as before observed, to the use of one at a time, and are by no means numerous. Hence, inflammatory action, no matter where it may be situated, is always to be subdued by a like mode of treatment; and the same argument applies to

most other descriptions of disease. Those which affect the nervous system, are frequently beyond the reach of art ; and, if curable, are only so by length of time, and by an entire change of living—that is, the total abandonment of those habits which have induced the disease.

It may be questioned, whether the potent chemical preparations and drastic purgatives, which are now so freely administered in this country, and which have obtained for our physicians, from their Gallic neighbours, the significant soubriquet of “ *Messieurs les Purgons d’Angleterre.*” are more efficient in the cure of diseases, than those gentler remedies which, with a strict regimen, were formerly employed. Perhaps, the additional light which morbid anatomy has, of late years, thrown upon pathology, or the physiology of disease, tending to rescue it so much from the trammels of theory, may ultimately lead to the adoption of a milder and more uniform treatment than is at present in use ; nor is it at all improbable, that cold water, judiciously applied as a sedative and antiphlogistic, or as a stimulant and re-agent, may form a portion of so desirable a change.

I am of opinion, that the sudden application of cold water to the surface of the body is not limited to a merely negative action, such as the simple abstraction of caloric, or the reduction of the temperature of the body ; nor to the merely mechanical one of constringing the capillary and other vessels, so as to diminish their capacity, and cause the blood to be squeezed out of them into the larger vessels, or those towards the interior ; but, that it exerts also a direct and positive influence, by galvanism, on the nerves themselves. When two bodies of different temperatures are brought into juxtaposition, as with two plane surfaces, a voltaic or galvanic action is instantly excited ; and the greater their difference of temperature, not approaching to incandescence, the more powerful will be this effect. Hence, the sudden application of cold water may act on the system with a voltaic energy, sending

a vibratory thrill through every nerve, even the most minute. On this supposition, we can readily explain why it rouses the system in a most remarkable manner, in cases of stupor, from whatever cause almost it may proceed, as is especially manifested in cases of asphyxia from carbonic acid gas. The experimentalized dogs of the Grotta del Cano are immediately restored on immersion. When the surface of the body is of a low temperature, and it is suddenly plunged into a hot bath, at 106° or 110° Fahrenheit, a similar effect is produced, which is speedily succeeded by a most violent reaction. Whence can this arise, but from a galvanic action, or something approaching to it? *

* Since writing the above, I find that Dr. Jackson, in his *Treatise on Cold Affusions for Fevers*, has entertained a similar opinion, namely, that "something belongs peculiarly to cold water as a medium, which, condensing power, augments impression by momentum, and which, giving impulse, also supplies power to enable the organization to sustain the subsequent action effectively and vigorously through its course. In this manner it is often observed that a person remains torpid in a faint, the animation suspended as in death while exposed freely in the cool and open air. He is roused to sensation, and moved into action, by the aspersion or affusion of water of the same, or nearly of the same temperature, with that of the air in which he lies motionless. This fact seems to imply that there is something in the water itself, or in the force with which the application of it is made, abstractedly from its mere cold, which conduces to the production of the effect stated. We may remark, that where the extremities or other parts of the body suffer from exposure to cold, in a dry atmosphere, in such a manner as to become painful, the act of immersing them in water, or of washing them in water of a like or lower temperature than that of the surrounding air, removes the pain speedily; nay, farther, the act of rubbing benumbed parts with snow or ice restores sense, life, and heat instantly. It is likewise known that a shower of rain, or aspersion of the animal body with cool or cold water, refreshes the animal, whether man or beast, when exhausted with labour or worn down with fatigue, in a degree very different from that which arises from change of temperature without the addition of the moisture. Soldiers better support long marches in continued rain, under all the disadvantages of deep and bad roads, than in weather of the same temperature without rain, and on roads in the best condition. It is even seen that where they are fatigued and exhausted, nay, fainting with toil, a shower of rain coming opportunely revives them suddenly, and enables them to prosecute the march with vigour and alacrity. This is a well-ascertained fact; and it seems fair to infer from it, that there is something in the water itself, as well as in its temperature, which applied to the body of the febrile

Admitting this to be the case, we can easily conceive that cold water, so applied, is one of the most powerful stimulants that can be used. It seems to act as if the nervous influence of the entire system were suddenly repelled and concentrated by it; and should it be so, we may form some idea of the way in which reaction takes place; for the repelling power being removed, and the nervous fibrillæ being greatly stimulated, the nervous influence returns with a *vis resiliendi*, overcoming the spasmodic barrier at the extremity of the vessels, and carrying the blood along with it into the capillaries, where the halitus is poured forth in the form of sensible or insensible perspiration, as the case may be. In the same manner, when certain emotions of the mind react upon the body, the blood is impelled in particular directions by the nervous influence, as is observed in the blush of shame, and in the increased secretions which succeed fear, anger, and the hysterical passion.

If cold be a powerful stimulant when suddenly applied and suddenly removed, and this, too, in proportion to the difference of temperature between the body and the water with which it is brought into contact, so, on the other hand, is it an equally powerful sedative during the time of application; and in cases where the nervous energy is much exhausted, the reaction takes place but feebly, if at all, so that the congestion, caused by the mechanical effect of cold, will

subject, makes peculiar impression on organic life, and which, while it impresses organism so as to change its condition and to move its action into a new channel, supplies the material which enables it to continue its operations with vigour and effect through its whole series of connexion. From hence it appears, if not demonstrative, at least more than probable, that cold water, affused upon the surface of the febrile subject, produces its salutary effect in virtue of some other property than that of cold simply subtracting or reducing increased heat; for it produces salutary effect when there is no evidence that increased heat exists in the subject of the experiment. If cold water, then, do not act by subtracting heat simply, it is plain that simple cold is not the property through which the salutary change is effected."—Page 341, *et seq.*

remain. For this reason it is, that reaction is always most perfect in those persons who are robust, and enjoy a high degree of animal life.

As reaction, and all the functions of life, depend entirely on the nervous influence, it becomes a question of the first importance, whence this influence is derived? Now, as the blood is truly said to be the *pabulum corporis*, it must, therefore, be secreted from this common source of nutrition; and since the solution of this question cannot be explained upon any other principle, it must be sought for in the chemical process of decarbonization; that is, in the function of respiration, which from the same source furnishes the elements of animal heat. If we admit the *vis nervosa* to be analogous to the electric fluids, and that caloric is a substance compounded of those fluids, we may perhaps be able to explain the development of these phenomena. Electricity, like caloric, exists in all bodies in a latent as well as in a free state; no chemical action can take place without its manifestation; it is of itself the most powerful chemical agent, and there is every reason to believe it to be the immediate or proximate cause of such action. Thus it is, that during combustion the latent vitreous, or positive fluid of the oxygen, and the latent resinous, or negative fluid of the inflammable base, separating from their respective particles by predisposing affinity, combine, at the same time producing heat and light; whilst the bodies themselves also combine, forming water, carbonic acid, &c., the whole process being in accordance with the laws of double decomposition. When the opposite poles of the galvanic battery are brought into juxtaposition, heat and light are developed or generated as the results of simple combination. In like manner, during respiration, as during combustion, the chemical action which takes place between the oxygen and the carbon, must necessarily be attended with similar chemical results, only modified by vital action. The latent electricity of the inhaled oxygen is absorbed into the blood, and

that of the nascent carbon is left behind, both about to produce animal heat, and at the same time to afford fresh materials for regenerating the nervous energy. Modified or guarded by vital action, no sudden combustion, or simultaneous combination, takes place; for were it so, life itself would be suddenly destroyed.* The temperature of the blood in the arteries becomes slightly elevated, and the globules change their colour, not from the loss of carbon; for, if venous blood is exposed, even in a bladder, to the action of carburetted hydrogen gas, a somewhat similar change in colour takes place, and the surface in contact with the bladder, or with the gas, assumes a bright vermilion hue; neither can the colour be attributed to the presence of iron, but may perhaps be found to depend upon the change of the electrical condition of the globules them-

* In telluric electricity, the fluids or electric energies are in a low state of combination, readily separated by friction. In this state they may be supposed to exist in the blood, a part only combining to form caloric in the arteries themselves, the principal action being reserved for the capillaries, where secretion and the vital functions are performed. A similar low state of combination exists also amongst the gases of the atmosphere, which are not mechanically mixed, but chemically combined. Thus, suppose the red globules, after their passage through the lungs, to be in a state of insulated electricity, with their negative and positive poles, we may readily conceive the electric fluid to be extricated during the passage of these globules through the capillaries, to be in part appropriated by the nerves, as the *vis nervosa*, and in part to be directed upon those universal points where the chemico-vital action of reparation or nutrition, and the generation of animal heat, are constantly going on. Thus the food not only supplies the materials to repair the body, but also the negative electricity, which perhaps constitutes the *vis insita* of the muscles, whilst the oxygen of the air we breathe supplies the positive electricity, and at the same time purifies the blood, by carrying off the superfluous carbon. The relative proportion of oxygen being thus greatly augmented by the liberation of the carbon, this act of decarbonization sufficiently explains why arterial blood should be richer in oxygenous compounds or products than the venous blood, without having recourse to the theory that any absorption of oxygen actually takes place; for after deducting the loss of the carbon, and that proportion of oxygen which combines with the hydrogen in the formation of water, not only is the quantity of oxygen consumed fully accounted for, but the quantity contained in the oxygenous compounds is precisely the same in the venous as in the arterial blood; or in other words, the absolute quantity of oxygen is the same in both.

selves, and the state of chemical combination arising from that condition. To enter more at large into this theory, which formed the subject of my inaugural dissertation, "De Calorico," published in the year 1818, would lead me astray from my present purpose. This view of respiration sufficiently explains the phenomena of which we are speaking, so that the air we breathe may be truly said to be the "breath of life," for with it we inhale the vivifying principle, or that which is necessary to support the functions of the system, and bring about all those chemical changes which are continually going on within the laboratory of the body. If life be dependent on organization, these functions must constitute it; and if organization be one of the properties of the living principle, we need seek no farther; for truly has it also been said, that "the life of the animal is in the blood thereof."

Thus, the blood, renovated by assimilated chyle, and rendered fit for use by its passage through the lungs, becomes not only the source from whence the body is furnished with materials to supply the loss arising from its wear and tear, but also the source from whence the nerves themselves derive their subtle energy—the proximate cause of chemico-vital action—which is directed along their innumerable conducting *fibrillæ*, as so many fine-drawn wires, to every the minutest point, carrying off the waste materials and supplying the new; thus keeping the machine in constant repair. Possessing within itself the means of continual reparation and of continual motion, this wonderful piece of mechanism seems, at first sight, calculated to endure to all eternity,—and it might have been so as easily as otherwise. But the germs of life and death are born together; and, as a watch wound up can only go for a stated period, beginning from the first moment to unwind itself, so may we be said from our very birth to begin to die.

"Nascentes morimur, finisque ab origine pendet."

The importance of an organ may be estimated by the quantity of blood directed towards it; and, if we take into consideration the great abundance of blood sent to the ganglia and plexuses of the nerves, and to the brain itself, we must conclude that the secretion is proportionable to the quantity sent; and since these organs are comparatively small, it cannot all be for the mere purpose of nutrition. If, then, we ask, What is it that is secreted? the reply must be, that which is peculiar to them—the *vis nervosa*. When the functions of any part of the body, or of any organ, are exercised beyond what is usual, the quantity of blood determined towards that part is proportionably increased. Thus, during the intellectual labours of the brain, this not only occurs, but, from the elaboration of ideas pictured thereon, the expenditure of the *vis nervosa* becomes as great and as exhausting by intense study, as by long-continued muscular exertion. Thus, after a full meal, a determination of blood is not only directed upon the stomach and the other *viscera* connected with digestion, but also upon the great solar or cardiac plexus which supplies the nervous energy; during which process the blood is withdrawn from the surface, when the individual experiences a shivering sensation, and is more or less incapable of exertion, whether mental or corporeal, so that repose is necessary; and thus, during muscular labour, the blood is not only sent in greater abundance towards those particular muscles which are called into action, to afford the *vis insita* of contractility, but the nervous energy is also directed upon them by the impulse of volition;* and this, as in the other

* The continued action of any sets of muscles, after they are once put in motion, does not seem to depend altogether on volition. Ostriches decapitated whilst running, still continue to run; and birds shot through the brain still continue to fly, until the nervous energy is exhausted. The habit of any action being acquired, it seems only necessary to be excited by volition, and is then carried on without particular attention, or any further effort of the mind, as walking, dancing, or running; or as playing, singing, reading the music and the words of the song—the action goes on, like a spring set in motion, and does

cases, at the expense of every other part of the body, inducing great lassitude and exhaustion. From hence we infer that the nervous energy determines the current of the blood; that the points upon which it is directed are absorbing centres; that the same law prevails as in crisis; for as no two critical evacuations can take place at the same time, neither can two absorbing centres co-exist; and hence the functions of the brain, of digestion, and of locomotion, or muscular action, are opposed to each other.*

It is impossible to ascertain what quantity of blood is apportioned to the nervous system; but, judging from the large quantity sent to the brain, it must be very great. On its return from the brain, as elsewhere, after having passed through the capillaries, it has become venous, showing that it has lost that peculiar property, which it had acquired during its passage through the lungs. If we look upon the nervous system as the *animal ipsissimum*, which the “*spiritus intus alit*,” and of which the body is the mere tenement or framework, we need not be surprised that so large a proportion of blood is required to afford a constant supply of that energy for which there is such a constant demand. When this demand is diminished by the system being in a state of comparative repose, as during sleep, the pulse and respiration become slower, fuller, and deeper; the brain, the nerves,

not cease immediately. Hence it often requires a great effort of volition to arrest the impulse which has been given; and as the muscles of locomotion continue to act after the head is separated from the body, so consciousness of existence may continue within this organ after it has been suddenly removed, as by the guillotine.

* It is highly probable that the nervous energy operates in a manner similar to galvanism or electricity; we find the brain is composed of two distinct substances, from whence we may presume they are intended to act upon each other in the elaboration of thought: and the *vis insita* of the muscular fibre is a different energy to that propelled by the nerves, and becomes exhausted, either by repeated galvanic shocks, or by great muscular exertion; hence the muscles of animals hunted to death, are relaxed and tender; and hence a salmon, killed by the rod, will not crimp.

and their reservoirs, as the ganglia and plexuses, are replenished, and we arise in the morning invigorated and refreshed.

During the irritation of disease, a similar determination of the nervous energy may be observed. Thus, when the poisonous miasmata of contagion are absorbed, the *rigor* is the first symptom of the impending fever; and the degree of reaction, that is, the intensity of the fever, is precisely in proportion to the extent of the *rigor*. This clearly indicates that the nervous system is affected by the morbid condition of the blood, and that the whole of the energy is directed upon the capillary vessels in order to expel the morbid cause. *Perfectissima fit sudoribus febris solutio*, is a maxim of great antiquity; and it is here where cold affusions, cold bathing, and cooling draughts, are of such inestimable value. All the secretions are in the mean time suppressed on account of the universal spasm affecting the extreme vessels; whilst nature, intent on one object at a time, directs her efforts to burst the barrier; and as soon as an outlet is discovered, the critical evacuation takes place solely from that point, and the secretions are restored to their normal state. On whatever disease we turn our attention, similar facts present themselves. In diseases of the humoral pathology the blood becomes vitiated; and should the peccant matter not be expelled, it is ultimately disorganized or broken down, as in a severe typhus or putrid fever; in a common cut or prick, a similar determination of the nervous energy is observed; and the same determination may also be noticed during strong emotions of the mind, especially such as are sudden; and for the like reason a sudden blow on the thumb-nail will not unfrequently cause sickness and syncope, the same as from a sudden shock. In which case it seems as if the nervous energy were directed on the injured part at the expense of the brain; and in like manner during the paroxysm of any depressing passion it is directed to some other organ, so that

the brain itself may not become paralyzed by the violence of the action.

From these, and other facts, which might be adduced, we may arrive at the following conclusions :—1st, That the vivifying principle of the blood is derived from the air we breathe ; 2dly, That this principle is afterward secreted by the nerves, and converted into the *vis nervosa* ; and 3dly, That it constitutes the difference between venous and arterial blood, so that, when secreted or separated, the blood becomes venous. From them we also learn,—1st, That currents of this energy are directed upon certain points or organs as circumstances may require, both in health and in disease ; 2dly, That these points or organs become, for the time being, centres of absorption or attraction, at the expense of the other parts of the system ; 3dly, That these currents are never directed upon two organs, or that there are never two centres of attraction at one and the same time ; 4thly, and lastly, that the increased determination of blood and development of animal heat are dependent on these currents of the *vis nervosa*.

These conclusions throw some light on the treatment of disease, both chronic and acute. They explain the salutary action of evacuants or counter-irritants in promoting the critical evacuation, and how, by diverting the nervous current, they change the action of disease. They also point out how cautious we ought to be not to attempt too much, or to interfere with the salutary efforts of nature by so doing. From them we may infer, as is borne out by the fact, that the best method of supplying the system with this vivifying principle, is by taking exercise in the pure and open air ; and, as the air of the mountain is more pure than that of the valley, so is it the more invigorating. From them we discover the reason why excess is injurious, since any organ over-stimulated exhausts the nervous energy of the system, as an absorbing centre of attraction, and produces the relaxa-

tion of debility. Thus excessive repletion weakens the stomach, intense study fatigues the brain, and immoderate exercise relaxes the wearied muscles, whilst every part suffers from being drained of its due proportion of this influence in order to supply the unusual demand of the part overstimulated. For this reason the stomach refuses to perform its functions, and the brain to exercise its faculties, when the muscles are wearied with laborious exertion.

As every organ is given to man for some special purpose, so should each be exercised in due proportion ; and this is not only conducive to health, but even necessary towards its preservation : and should any organ be unduly exercised, and the others remain in a state of comparative repose, it is invariably at the expense of the rest of the system. Thus, when the brain alone is exercised, and the muscles never called into action, they become feeble ; and when the muscles are constantly exercised, the brain being totally unemployed, the man degenerates almost into a mere beast of burden, unable to exercise the faculties of the mind. By the due exercise of each, all are invigorated and more fully developed. The blood being directed in its course to each in its turn by the current of nervous energy, all the parts are better nourished, and, by daily exercise, acquire increased strength. This is well known in gymnastics, and is equally applicable to the brain. On the other hand, exhaustion, from whatever cause, is invariably followed by feverish excitement or reaction. It is thus that even in health the slight stimulus of the functions of life during the day is followed by a degree of fever and an accelerated pulse towards the evening, indicating the period of repose ; whilst in disease this becomes more strongly marked, with a higher degree of exacerbation. The frequent stimulus of reaction operates in the same way, and gives rise to the fever which accompanies the water treatment.

Since the skin, to a more limited extent, performs the same

functions as the lungs, so to that extent we may be said to breathe by the one as well as by the other. The same chemical change takes place; the venous blood is to a certain extent arterialized. This alone points out its great importance, and the benefits to be derived from cleanliness, friction, and free exposure to the air; and perhaps from the well-known chemical effects of the rays of light, its access might greatly promote the salutary action of the air. In consequence of this similarity of functions, a great sympathy exists between these two important organs. A talented surgeon informed me that a patient was received into the hospital to which he is attached, who had laboured for several weeks under great difficulty and oppression in breathing. Being in a dirty and destitute condition, he was, as is usual, ordered to be washed; on being stripped, the skin was found completely encrusted with filth; he was well scrubbed in the bath, put to bed, slept soundly, and the next morning arose perfectly free from his complaint, and was therefore discharged.

An intimate knowledge of physiology is indispensable to the physician; yet it unfortunately happens that the practice of physic in our present state of knowledge, is necessarily directed rather against the symptoms, than against the disease itself; which, being a proximate cause, eludes our investigation. It is this obscurity which gives rise to so much uncertainty, and to the varieties of opinion which prevail in the choice of remedies, and in the treatment of the disease. To render the classification of diseases more simple, and the art of healing more uniform, would be the greatest boon that could be conferred on society; and the water treatment certainly contributes towards this desirable end; for as the functions of life depend on the nervous system, so must the disturbed or diseased state of those functions be as intimately connected with it. This method of treating diseases not only enables us to arouse the energy of the nerves in the highest degree, but also of directing that energy upon any given

point; and thence to overcome the diseased action, and to expel the peccant matter. Being combined with air, exercise, and diet, it can scarcely fail of being more or less efficacious in nearly every chronic disease, whether it depends upon a vitiated state of the fluids, or is purely seated in the nerves themselves. It has been justly said by Cadogan, in his admirable dissertation on chronic diseases, that gout, and the great majority of these diseases, are brought on by indolence, intemperance, and vexation. It is therefore clear that diseases which are brought on by sloth and over-feeding, can only be radically cured by abstemiousness and exercise. *Contraria contrariis curantur*, is the axiom of Hippocrates; and Aristotle's simile of the crooked stick requiring to be kept some time bent in the opposite direction in order to bring it straight, holds as true in healing the diseased condition of the body, as in correcting the evil tendency of the mind. In nearly every disease, whether chronic or acute, regimen acts a most conspicuous part. Celsus informs us that he has known many very acute diseases pass off spontaneously by rest and total abstinence. "Multi magni morbi curantur abstinentiâ et quiete." Dr. Hancock, Father Bernardo, Nicolo Crescenzo, and many others, cured them in this way, combined with the internal use of cold water.

The medicinal use of cold water either arrests the inordinate action of the heart and arteries, or stimulates their energies, as may be desired; it resolves the spasm, allays irritation, provokes perspiration, excites the kidneys, and gives a tone to the stomach. When topically applied by the heating bandage, it removes the epidermis, produces inflammation, and draws down the humours. Thus we may derive from it all the effects of sedatives, antispasmodics, diaphoretics, diuretics, and tonics; of digitalis, opiates, antimonials, and many other remedies, without disturbing the functions of the animal economy, and without the danger of accumulation, which so frequently arises from the injudicious and long-con-

tinued use of these drugs. We also derive from it all the good effects of fomentations, rubefacients, blisters, and other counter-irritants. This greatly simplifies the treatment, and reduces the catalogue of remedies. We at once banish from the list the potent mineral preparations, and the no less dangerous and poisonous tribe of narcotics, both so much avoided by the continental physician, that the very names of calomel, opium, and antimony, create in the patient a feeling of alarm, from the dread of being poisoned. We might then, with advantage to the patient, return to the practice of the ancients, consisting of a few simples and gentle aperients. All the older physicians considered abstinence a most important part in the treatment of diseases, and relied on it fully as much as on the remedies employed, which, before the days of the Arabian physicians, were but few and simple. Thus we find the treatment adopted by Hippocrates was principally confined to bleeding, cupping, warm baths, cold effusions, a few purgatives; and for diet, thin barley-water. Galen followed nearly the same treatment, and Herodicus relied altogether on diet and abstinence. The celebrated Stahl and his followers did nearly the same, watching the crisis, and directing their efforts to the periods when it would take place.

All the celebrated physicians of ancient days considered medicine subservient to nature. It is only in latter times that, instead of noting the indications of nature, the practice became regulated by some preconceived opinion, for the most part erroneous. According to the humoral pathology, the fever was considered a salutary effort of nature; and the inflammation of wounds or phlegmonous tumours was necessary to support suppuration, without which the wound could not radically heal. Thus, by mistaking effects for causes, the doctrine of "coction" derived its origin. This theory gave rise to the fatal hot regimen, more destructive of human life than the most cruel wars. Those slain in the

field of battle for several preceding centuries would bear but a small proportion to the hecatombs of victims immolated at the shrine of this false theory. So fatal was it, that if any escaped it could be attributed solely to the strength of the constitution, or rather that the patient happily transgressed the orders of his physician. Yet such is the force of education, and the obstinacy of habit, that even the great and good Sydenham, who first pointed out the error of this theory, and, by adopting the precepts of Hippocrates, followed a more natural and rational method in the cure of diseases, attended with fever, was, for this innovation, denounced by the majority of his medical brethren as a quack. So difficult is it for those who have grown old in any preconceived notion to admit of their error; and for this reason no physician, who had attained the age of forty, would allow of the discovery of the circulation of the blood. Such was the opposition this brilliant discovery of the immortal Harvey met with, and such was the abuse heaped upon our English Hippocrates, who, observing the instinct of nature, introduced a cooler regimen in every species of fever,—a practice now universally adopted. Yet, so difficult is it for the mind to divest itself of the trammels of theory and early education, that even the learned and philosophical Sydenham still retained the doctrine of coction and its concomitant fever, notwithstanding he had observed that in the eruptive fever of the small-pox, the less the fever the more favourable was the eruption. “*Quò sedatior est sanguis, eò melius erumpunt pustulæ.*” An aphorism worthy of Hippocrates himself.*

* Dr. James Sims remarks, “from an unwillingness to change old methods, rendered sacred from the various foolish reasonings in their defence, arises the small improvement medicine has ever received from regular physicians. Indeed,” he adds, “this appeared so strongly to the elder Dr. Gregory, that he justly asserts, that medicine has received more improvement from that illiterate enthusiast, Paracelsus, than from all the physicians who had lived since the days of Hippocrates, Sydenham alone excepted. Can there be given a more melancholy picture of our unreasonable obstinacy in adhering to unsuc-

This fact alone sufficiently proves the fever is merely symptomatic, that it is entirely foreign to the "coction;" in short, that it is merely the result of irritation, and has nothing to do with the disease. The less the fever, the more favourable is the eruption, the more complete is the "coction;" because the less is the disturbance, and therefore everything goes on in a regular progressive order, according to the peculiar type of the disease. Nature, waiting a favourable opportunity at the periodical changes which take place, either collects her resources to expel the morbid matter from the system by the effort of a crisis, or otherwise the disease runs its course, to terminate in the gradual recovery of the patient. In this case the diseased matter passes off slowly and silently; and a part being sometimes deposited in the system, gives rise to chronic affection.

Of all physicians, either ancient or modern, no one paid so much attention to the progressive march of a disease, the period of its duration, the critical evacuations, and the periodical changes which take place, as the celebrated Stahl and his followers. He observes that "in the spontaneous cure of diseases, especially those which are acute, every disease runs a certain course; and at a stated period nature effects a cure by the expulsion of the morbid matter, and thus restores the system to a perfect state of health without any remedy being administered. It was," he says, "a maxim among the ancients, '*nihil paucum criticum.*' The crisis should be abundant,—a full, free, and copious evacuation, otherwise it

cessful modes of practice!" A considerable change has taken place, at least in the mode of reasoning, since the time of the late Dr. Sims. The doctrine of coction, and the hot regimen, had passed away long before his time. The Brunonian school no longer exists. The rational theory of spasm and the humoral pathology have submitted to a like fate. The modern professors of the art, rejecting every theory, have become strictly empirical, and, like other empirics, rely entirely on the force of their remedies, without attending to the directions of nature or the crisis of disease.

"Dum vitant stulti vitia in contraria currunt."

afforded no relief, but rather aggravated the malady. Thus, in the critical hemorrhage of a fever, when the blood flows freely and largely, it is followed by a universal *euphoria*, or sense of ease and relief; the febrile symptoms disappear, and the pulse becomes natural. If, on the other hand, it is scanty, it not only affords no relief, but all the symptoms become aggravated. Previous to this critical evacuation, there is a determination of blood to the head, the secretions being in the mean time suppressed or diminished. Nature relieves the plethora by a hemorrhage, preparatory to the expulsion of the morbid matter, which afterwards takes place by some other evacuation. Hence the advantage of copious bleeding in fevers. It is by observing, during these critical periods, the tendency of the directions of nature, by carrying relief to her salutary efforts, and regulating her motions, that the disease is to be cured. Such was the practice of the ancients. Hence their careful preparation of the humours, so that the secretions and the excretions might be duly and perfectly performed, in order that these critical evacuations might freely and fully take place. Long since Hippocrates inculcated that nature, untaught in the schools of medicine, affords whatever is right and proper to be done, that such things may become the healers of disease. Many sick recover without a physician and without drugs, but none without healing. ‘Pridem indicavit Hippocrates, quod natura, à nemine edocta, præstet τὰ δέοντα, quæ debeant, decent et convenient fieri, quod natura ipsæ sint morborum medicatrices; quod multi homines sine medico atque medicamentis sanentur, nemo verò sine medicinâ.’ We find, from the observations of the ancients, that by knowing what should be done, especially during the seasonable exertions of the crisis, which is the battle of nature herself with the disease, that thus they achieved the victory of nature, and brought the disease to a speedy termination.”

Hence, we may perceive, that whenever a critical evacua-

tion is about to take place, there is a determination of nervous energy and of blood to the part by which the spasmodic barrier may be overcome, or an hemorrhage takes place, by which the spasm is resolved. It would further appear as if the intervals between the critical periods were to afford nature an opportunity to discover the weakest point of the enemy, and sufficient time to collect all her strength for the assault. If repulsed, she does not immediately renew the attack, either in the same or in another quarter, but reposes awhile from her efforts, and then, like a skilful general, concentrates her scattered forces, and brings all to bear upon a given point. Who ever heard, in the spontaneous cure of an acute disease, that a critical bleeding from the nose, a diarrhoea, a copious secretion of urine, a cutaneous eruption, or a profuse sweat, all supervened at one and the same time; yet, together with bleeding and blistering, what a farrago of medicine is ordered with different intentions; purgatives, diuretics, sudorifics and emetics, anodynes, tonics and carminatives, either separate or jumbled together in pills, draughts, or powders, to be daily swallowed, “*simul et semel usque ad nauseam.*”

We also perceive that when the crisis is not full and complete, or the morbid matter not wholly expelled, the disease then assumes the chronic state. Thus, in cases of fever, whether continued or intermittent, congestions of the liver, or of some other organ, are of frequent occurrence, as in the case of Dr. Bulard. The *vis medicatrix* of nature, in order to avoid the more immediate danger from the poisonous molecules of disease being suffered to remain circulating in the blood, deposits them on these organs, similar to what takes place during a paroxysm of the gout, when they are driven into the extremities. But that a critical evacuation is at all times necessary for the re-establishment of health in chronic diseases, or that they should be rendered acute, as preparatory to this discharge, according to the assertion of Priessnitz, is

by no means true. In these forms of disease they generally pass off slowly, silently, and imperceptibly; or, in other words, the return to health is very gradual; as much the effect of time and regimen as of medicine, or of the water treatment. Unless in some cutaneous diseases, where, from the frequent stimulus of reaction and sweating, their expulsion may become more rapid, as from the effects of the wet bandage or moist sheet, where, from the colour and odour of the exudation, a critical discharge seems to take place.

For a crisis to be established, requires, as has been pointed out by Stahl, the concentration of the vital energies; but if we diminish the strength by repeated bleedings, direct these energies to different organs, and thus stimulate them all at the same time, and this continually, it is clear that it becomes impossible for a critical evacuation to take place. Neither does it. From the present state of the practice of physic, a crisis is a *rara avis*, seldom seen, and often denied.

The water treatment, as practised by Father Bernardo, and Dr. Hancock, and others, in acute diseases, constitutes the most purely antiphlogistic regimen that can be adopted; and, whilst by the addition of the moist sheet, or cold effusion, it solicits a crisis by the skin, yet it leaves nature free to select any other direction, without constraint, and without that disturbance which the exhibition of powerful drugs necessarily excites. It may, therefore, be considered a natural mode of cure, and in acute diseases is strictly in accordance with the instinctive feelings of the patients,—that is, with the voice of nature; whilst in those which are chronic, the abstemious regimen, the wet bandages or fomentations, the perspiration, and the exercise prescribed, are equally in accordance with the indications of cure laid down by every writer of eminence on this subject, whether ancient or modern.

If we direct our attention to the numerous cures, which have been accidentally performed by the patients themselves

plunging during the delirium of disease into cold water, we are compelled to admit the medicinal virtues of this remedy. Dr. Brayer, in his highly amusing and instructive work, entitled "*Neuf Années à Constantinople*," relates the following facts:—"Le professeur Desgenettes rapporte les deux faits suivans: 1°. celui d'un sapeur attaqué de la peste pendant l'expédition de Syrie. Dans un violent délire il s'échappa nu du fort Cattieh et erra pendant près de trois semaines dans le désert; deux bubons qu'il avait abscédèrent et se cicatrisèrent d'eux-mêmes. Il subsista, quand il senti le besoin des aliments, avec une espèce de petite oseille. 2°. Celui d'un artilleur qui avait deux bubons et un charbon, et qui, aussi, dans un délire s'échappa des barraques du lazaret de Boulak et se précipita dans le Nil; il fut retirée au bout d'une demi-heure au-dessous d'Embabeh par des habitans de ce village, et il guérit parfaitement.

"Savaret, un des médecins employés à l'expédition d'Egypte, assure qu'un capitaine de vaisseau, ayant contracté la peste en soignant ses matelots, ressentit une excessive chaleur, comme si son sang eut bouilli dans ses veins; il lui semble qu'il n'avait plus que quelques instans à vivre. Profitant de peu de raison qui lui restait pour faire une essai, il se coucha tout nu sur le tillac, par un temps fort brumeux; l'humidité le pénétra de toutes parts. Au bout de quelques heures sa respiration devint plus libre, l'agitation de la circulation se calma, de sorte qu'après avoir pris un bain de mer il fut entièrement guéri."

I remember, when a student, the late Dr. Gregory used to relate in his lectures a similar case. A gentleman, during the delirium of a typhus fever, escaped by the window, his bedroom being on the ground floor, then plunged into the river flowing at the bottom of his garden, swam across and climbed up the opposite bank. The sudden shock of the cold water, with the exertion of swimming across the stream and scrambling up the bank, restored him to his senses. Sensible of

his situation, in the middle of the meadow and his return intercepted, he was obliged to recross the river in the same way, and having regained his chamber got into bed, fell into a profound sleep with a profuse perspiration, and, several hours afterwards, awoke perfectly free from the fever.

Dr. Willis, in his treatise on Phrenitis, gives a very remarkable case of a girl who was cured of this disorder by immersion in cold water. "Some time ago," says the Doctor, "I was called to attend a robust and vigorous servant maid, who being seized with a fever, became so furious and mad, that it became necessary to keep her continually bound in bed. I took a large quantity of blood from her at different times, opened the bowels by repeated clysters, prescribed the usual remedies in such cases, with the addition of juleps, emulsions, and opiates. But all these were of little or no service; she remained without sleep, and raving mad, for the space of seven or eight days, crying and roaring incessantly for some cool fluid to drink; for which reason she was allowed as much water as she pleased; but was neither rendered more calm, nor less thirsty, by that means. As it was the summer time, I ordered her to be taken up in the middle of the night by women, and carried to a boat, where her clothes being taken off, and the cords with which she was bound untied, she was plunged into a deep river, having previously tied a rope about the trunk of her body, lest she should happen to be drowned. But there was no occasion for this expedient, for the girl could naturally swim with so much dexterity, that a man expert in that exercise could have scarce acted his part better. About fifteen or twenty minutes after, she was taken out of the water sober and in her senses. Upon which, being laid in bed, she slept, fell into a profuse sweat, and was thoroughly recovered without the use of any other remedy whatever."

Dr. James, the author of the medicinal dictionary, relates an interesting case, which was told him by Sir John Floyer.

“ Sir John was called to a farmer’s wife, at a village about four miles from Lichfield, who was ill of a fever, attended with delirium and an utter privation of sleep. It happened one night, that the patient lay for a little time pretty still, and the nurse took that opportunity of going softly out of the room for a few minutes, upon a necessary occasion. When she returned, she found all still and quiet, and sat down by the bedside for at least a quarter of an hour, but observing that she did not hear the woman breathe she put back the curtains, suspecting she was dead, but was much surprised to find she was not in bed. After searching the room to no purpose, she alarmed the people in the house, who, after some time, found the woman in the yard up to the chin in water in the well, which was, as is usual in that country, not much above five feet deep, and nearly full of water. The woman was instantly taken out, and put to bed, and immediately fell asleep. Soon after a profuse sweat broke out, which continued for many hours. She awoke without any delirium, and recovered without any further trouble.”

In all these cases we have the critical sweat so much extolled by the older physicians. The works both of Currie and Floyer abound with instances of this kind, and surely these facts ought to open our eyes to the true pathological treatment of inflammatory disorders. Nature herself indicates the cure,—the patient craving after cool drink and cool ablutions. It was upon this observation that the celebrated water-doctor, Father Bernardo, founded his practice. If dipping the hands into cold water, or having them spunged with vinegar, is found so refreshing, how much more so must it be to have the entire body, burning with feverish heat, cooled and refreshed by a deluge of cold water poured upon it, or by a sudden plunge into the cold bath. It is the copious, cool, acidulated drink, which is grateful to the palate parched with fever, and not the hot spicy cordial of former days, or the scanty *placebo* of an effervescent draught

of the present time. If healing is justly said to be an art, its perfection must consist in the close imitation of nature, and not in its antithesis. “*Ars maxima est celare artem*,” is an ancient axiom; yet how few there are who observe it in their practice, and often how contrary are the indications of nature to the empirical polypharmacy of the physician!

All knowledge is derived from the observation of facts, and not from the fruitless endeavour of bringing to light the hidden causes which have given them birth. We may gather both from the pathological observations of the older physicians in respect to crisis, as well as from what daily passes before our eyes, that the skin exercises a most important function, not only towards preserving the body in health, and thus warding off disease, but also in being the principal outlet for the critical discharge of the peccant matter, and thus healing it when diseased. It is from this source that the febrifuge virtues of the compound antimonial powder are derived,—the celebrated powder of the author above quoted, which still continues to enjoy the highest reputation. But the application of cold water to the surface, cools, refreshes and stimulates by reaction, without irritation; whilst the preparations of opium with antimony or ipecacuanha invariably irritate the system, and frequently without producing the desired effect of acting upon the skin. In short, all the pharmaceutical evacuants stimulate by irritation, and must, in the first instance, act upon the mucous membrane of the stomach and intestines, and more or less disturb its functions. But the stimulus of reaction is directly applied to the nervous system, causing a determination of blood and a current of *vis nervosa* towards the surface, without disturbing the functions of any other organ. By the one the critical evacuation is solicited, by the other it is forced. The danger of congestion can only proceed from the ignorance or unskilfulness of the practitioner, and it may be observed that this result is by no means so frequent as the evil consequences attendant on

blood-letting, or arising from the unskilful exhibition of the potent pharmaceutical remedies in daily use,—consequences of which it is impossible to calculate the extent.

If from pathological observations we find the skin of such great importance in the cure of disease, it follows that it is of equal importance in affording protection against the invasion. Hence it has been noticed, that those who are exposed to be frequently wet, and therefore, as it were, washed, such as fishermen, tanners, bleachers, and others, enjoy a remarkable immunity from contagious diseases. The skin performing its functions freely, it would seem as if the poisonous miasma of contagion were carried out of the system as speedily as they are absorbed into it. On the other hand, such as neglect this cleanliness of their persons become highly susceptible of cold and contagion, of fever and inflammatory disorders. This may be remarked in those who are accustomed to warm clothing, especially such as wear flannel next the skin and keep much within doors. From the constant use of flannel the skin becomes unctuous, as if covered with a coat of varnish closing the pores; so that the insensible perspiration is impeded, or to some extent suppressed. For this reason the blood, instead of circulating freely, so that the chemical action with the oxygen of the atmosphere may take place, is repelled, from the cutaneous arteries or capillaries, and from the exhalent glands or pores, into the larger vessels, and the individuals feel chilly on the slightest exposure. Perhaps for the same reason the morbid miasmata, unable to escape by this outlet, are retained in the system, acting as a ferment and reproducing their own poison, which rapidly manifests itself under some peculiar form or type, accompanied with fever. It is thus John King, in his essay on cold bathing, observes, that “the causes of all our rheumatism, and many other diseases, are chiefly owing to the pernicious use of flannel and woollen shirts next the skin.” Sir John Floyer also says, “We ought not to wear too many clothes. The

old writers prescribed an exercise naked. The wearing of flannels renders the person very tender, and subject to the changes of the weather. Down beds are also very injurious. Sitting constantly by the fire, constant use of hot liquors, and hot baths, make the body subject to greater tenderness, and consequently to the changes of weather in cold countries." These facts have not escaped the observation of the philosopher of Graefenberg.

"*Rusticus, abnormis sapiens, crassâque Minervâ.*"

It is strange we should be so fully sensible of the importance of this origin in other animals, yet neglect it in our own persons. How many thousands there are who pass their lives without ever allowing cold water to touch their bodies, unless accidentally caught in a shower of rain! who content themselves with merely washing their hands and face once a day, and their feet never but in warm water! Whilst others if ever they wash their bodies with cold water or take a cold bath, do so in the heat of summer, merely to cool and refresh themselves, without considering it conducive to their healths. Yet what care we take of our domestic animals in this respect. Our horses are rubbed down or curried twice a day, and with especial care after a journey. We know how much they are refreshed by it, so that it is a saying, "a good grooming is equal to a feed of corn." The farmer curries his stall-fed oxen to make them thrive the better; and even in the refinement of polished life, the lady, who shudders at the thought of cold water, orders her favourite spaniel to be washed and combed once a week. Nature has kindly provided for the wants of all her offspring, and there can be no doubt but in this respect she has equally provided for man. It is the sedentary restraint and the artificial wants of civilized life, so much at variance with her laws, that have brought a whole host of diseases to shorten and embitter his existence. As nature formed him, he is the most robust and the most

enduring of all animals, neither the horse nor the dog can support the daily fatigue of his march; we find him inhabiting every climate, from the torrid zone to the frozen poles. He is patient of fatigue, capable of enduring hunger and thirst, but little subject to disease, and his existence protracted to the longest span. Endued with superior organization, and superior intelligence, he is formed to enjoy existence, yet in the midst of the luxury of civilization, he is beset with every species of moral and physical ills. How dearly does he purchase those refinements his superior intellect has procured! To behold the care he takes to provide for his artificial wants, one would suppose nature had disowned him for her offspring, or was but his stepmother. He persuades himself, that mind has been imparted to him in lieu of instinct; that whilst other animals act in obedience to the blind impulse of nature, his actions are governed by the Divine ray of reason. How blind must be that reason which constantly leads him astray! With what care he covers his feet lest the cold or damps should penetrate, yet the barefooted children of the poor neither feel the cold nor suffer from the damp. In like manner the warm muff or well-furred gloves protect his tender hands, where the more hardy ploughman never feels the cold. Shivering beneath the breeze he seeks for warmth, and finds it not,—whilst his robust ancestor, the Pict or the Briton, exposed his naked body to the full influence of the atmosphere and every change of temperature, or whilst the no less hardy child of nature, the red Indian of our own days, inhaling the pure breath of heaven, with invigorated limbs, and with the warm glow of health, roams through the forest

“ with bosom bare,
Nor heeds the storm that howling rushes by.”

If by thus protecting our persons, like hot-house plants, we become shrivelled and chilled on the slightest exposure, constantly subject to cold and rheumatism, and if by satiating

the "palled and jaded appetite," as if we lived to eat like the stall-fed ox, the number of diseases are greatly increased, and the amount of our enjoyments as greatly diminished, how much more rational it would be to return to Nature, to restrict ourselves to what she requires, and, with frugal simplicity, learn to eat that we may live, that her wants may be supplied. If the enjoyment of indolent repose, and the comforts of a warm fire-side, render us pale, dejected, and dyspeptic, let us seek for health and warmth in the fields, and give motion to our limbs, without which neither plant nor animal can thrive; we may then with safety lay aside our warm clothing without the dread of cold. If by filling our veins and poisoning our nerves with the liquid fire of ardent spirits we become feverish and diseased, let us quench our thirst from the limpid stream, and drink water medicinally to cool our burning feverish heat, and expel from our veins the fiery poisonous particles which consume and dry up the fountains of life. When the blood circulates more freely, and the stomach is relieved of the load which oppressed it, a new nervous influence will invigorate every muscle, and the sympathizing mind, no longer brooding over imaginary ills, will participate in the elasticity of the body, and impart a conscious feeling of renovated health and youthful existence.

As barbarous and semi-civilized nations live much in the open air, freely exposing their persons to wet and cold, without danger or inconvenience, like the Scythian, quoted by Dr. Hahn, whose body was all face, so may civilized man lay aside his acquired habits, and inure himself to the same exposure. Man is still the same animal, whatever may be his mode of life, and to return to nature, or lay aside his artificial wants, is neither so difficult nor so hazardous as many suppose. Hence we find that landsmen, accustomed to have their necks and chests carefully covered, upon becoming sailors, freely expose those parts without suffering any ill effects therefrom. Neither does it appear that, during the

expedition of Sir John Ross to the North Pole, the crew suffered from the cold; but on their return home, found the warm and confined atmosphere of a house inconveniently oppressive, perhaps from its exciting some degree of feverish reaction. Sir Walter Scott, in his *Notes to the Lady of the Lake*, relates the following anecdotes:—"It is reported of old Sir Ewen Cameron of Lochiel, when upwards of seventy, that he was surprised by night on a hunting or military expedition. He wrapped himself in his plaid, and lay contentedly down on the snow. When the Highlanders are constrained to lie among the hills, in cold, dry windy weather, they sometimes soak the plaid, and then holding up a corner, turn themselves round and round until they are enveloped by the whole mantle. The wet, they say, keeps them warm by thickening the stuff, and keeping the wind from penetrating. I must confess," says the writer of the letter, "I should have been apt to question this fact, had I not frequently seen them wet from morning to night, and even at the beginning of the rain, not so much as stir a few yards to shelter, but continue in it, without necessity, till they were, as we say, wet through and through. They have been accustomed from their infancy to be often wet, and take to the water like spaniels, and this has become a second nature." It is thus we behold soldiers during a campaign, accustomed to bivouac, suffer but little from cold or wet. It has been noticed that the French revolutionary armies, notwithstanding they had to submit to every privation from the want of shoes, of clothing and of food, and constantly sleeping in the open air, yet supported by the stimulus of enthusiasm, enjoyed a remarkable immunity from disease. The open air, constant exercise, the excitement of danger, and the hope of conquest, sustained their energies. I may here observe, that the enthusiasm which prevails at Graefenberg, and most watering places, in many instances contributes not a little towards the cure. For what is enthusiasm, but exciting the nervous influence by a moral cause?

The excitement of madness gives rise to a similar effect, and wards off other diseases, and by the stimulus of reaction the Highlander sleeps in his wetted plaid on the open heath without injury.

Life may be said to consist in motion, and, as the flame requires to be fed, or the watch to be kept wound, so does the body require a constant supply of stimulus, as food, fresh air, and exercise, in order that its healthy functions may be sustained. The sudden withdrawal of stimulus, like the depressing passions of the mind, exhausts the nervous energy and exposes us to the inroads of disease. Those who live in the open air, and are robust in the resistance of cold, of wet, and of fatigue, can but ill endure the comforts of warmth or brook the monotony of confinement. The mind and body begin to languish, and a low nervous fever frequently follows. Thus troops, which have braved the rigours of a winter campaign, fall sick and die in great numbers, from fever, when they enjoy the luxury of a warm bed, of idleness, and comfortable quarters; the stimuli of cold and exercise, and the excitement of the campaign, having been suddenly withdrawn. This sudden change from cold to warmth is invariably followed by feverish reaction. Hence there is greater risk of taking cold upon suddenly entering a hot room, or breathing a heated atmosphere, after having been long exposed to cold air, than in the reverse. Hence parts that are frost-bitten become mortified by sudden warmth from the spasm of the vessels and the violence of the reaction. Every schoolboy is familiar with the effect of warming his benumbed hands at the fire, after a game at snow-balls; and hence it was that Elizabeth Woodcock, who remained buried eight days under the snow, nearly lost her life from the violence of the fever which followed. For the same reason that the robust man, who can resist cold and wet in the open air, languishes under the influence of warmth and confinement, it behoves those, who, for a length of time have submitted to the process of

the "water-cure," to be extremely cautious how they return to their former sedentary mode of life.

The doctrine of reaction, that cold water combined with friction gives a tone to the vessels, increases and restores the circulation, acts as a derivative, promotes the expulsion of the peccant matter, and thus purifies the system, constitutes, as has been frequently stated, the basis of the "water cure." It is thus when parts are frost-bitten or benumbed with cold, the vitality and circulation are restored by friction with snow or ice-cold water, perhaps the best remedy for chilblains. Thus when the hands or face are washed with cold water, they become red, and the skin of any part of the body constantly exposed to cold air acquires a redness, and the body, upon being rubbed dry after the cold bath, assumes a glow or red tint. Hence cold water becomes a derivative, whilst warm water, on the contrary, is said to repel; for, notwithstanding the turgescence of the vessels during the time, they soon fall into a state of collapse; the hands washed in warm water soon become white, and shortly after the warm bath the body remains pale. Plunging into the cold bath, on being rubbed dry, the re-action is brought forth, whilst by returning to the warm bath it is destroyed, and may thus be reproduced and destroyed as often as the experiment is repeated.

Thus by means of reaction cold is a powerful stimulus, and without reaction it is of itself a sedative, even to the extinction of life. When exposed to an intense degree of cold, the parts about to be frost-bitten lose sensation, and the individual about to perish feels a torpor of body and mind, with an irresistible desire to fall asleep. The pulse gradually becomes more and more feeble, and the *vis nervosa* in the same ratio less and less capable of resistance, until the part affected loses its vitality, and, yielding to the laws of inorganic matter, at last becomes frozen. From hence we may also gather that the sedation or catastasis of cold and its reaction are direct positive effects on the nerves themselves, indepen-

dent of the warmth of temperature in the one case or the abstraction of it in the other ; for it is by friction with snow or ice-cold water that warmth and vitality are restored, and as by friction the electric fluid is excited and accumulated in inorganic bodies, so by similar means the nervous energy is restored to the benumbed or frozen parts, as if the animal body were an organized electrical machine.

Heat, like other diffusible stimuli, excites for the moment, but leaves the body relaxed and exhausted. After washing the hands in warm water they soon become cool and sensible of cold ; the same observation is applicable to the warm bath, or to warming the body at the fire on a frosty day. This want of action cannot be attributed to the mechanical effects of temperature ; for notwithstanding the relaxation, and consequently the increased capacity of the capillary vessels, yet, when the stimulus of heat has ceased to operate, they no longer admit the red globules, which prove that this relaxed condition arises from the want of contractility in the vessels themselves, from the deficiency of nervous energy ; whilst by the reaction of cold this energy is supplied in great abundance, and notwithstanding the firm and tense condition of the skin, the vessels having acquired additional contractile elasticity, the red globules are propelled with force. It is this which constitutes the difference between the exhausting and transient stimulus of heat, and that genial influence or tonicity which is propagated to the extremities of the nervous *fibrillæ* from the reaction of cold.

The sensation of cold, the horripilation and shivering which accompanies it, is very similar to the *rigor* of a fever, whilst the following hot stage may be considered the unavailing effort of nature to bring about a salutary reaction, but which is arrested, as has been stated, by the spasm of the nervous *fibrillæ*. In health, the *vis nervosa*, repelled by cold, returns with the elasticity of a bended bow ; in the *rigor* of disease, nature, concentrating her forces to expel the peccant matter,

seems to withdraw this energy, in order afterwards to direct it with increased vehemence either on the skin or some other excretory organ where the critical evacuation is to take place; and the degree of this reaction, or the intensity of the hot stage, is precisely in proportion to the intensity of the preceding *rigor*. No part can suffer two actions at the same time—the weaker yields to the more powerful; thus a stimulating application cures a burn, or the caustic alkali heals a foul and sluggish ulcer; the more powerful action induced by art overcoming the weaker action induced by disease. This view of the subject explains how, during the fever, the effusion of cold water resolves the spasm; also how even during the cold clammy sweat of disease, it gives a healthy tone to the vessels and restores the patient. This salutary reaction, impressed on the nerves of the skin, imparts a peculiar and indefinable sensation of well-being to the entire body, and, by the laws of sympathy or nervous intercourse, is communicated to the excretory ducts and sentient extremities of the nerves and vessels throughout the system, leaving nature unconstrained in the choice of the crisis about to take place.

The internal use of cold water is scarcely less beneficial than the daily custom of washing the body; for as the mucous membrane sympathizes with the skin, so does the reverse take place. Thus during a sharp biting frost, a hearty draught of cold water gives a warm and healthy glow, whilst successive cups of hot tea, like the transient stimulus of heat or of the warm bath, excite and warm for the moment, but render us more sensible of the cold when again exposed to its influence. For the same reason, the diffusible stimulus of wine or spirits still more rapidly excites and exhausts the nervous influence. This was exemplified in a remarkable manner on the disastrous retreat of the French army from Moscow, for such as drank brandy to keep themselves warm were the first to be frozen to death. Many instances might

be adduced illustrative of this and similar effects from the use of alcoholic liquors, in persons exposed to cold or undergoing great fatigue, showing under these circumstances, that heat, wine, and spirits, are stimuli which rapidly diminish the *vis insita*, or strength of the muscles, exhaust or dissipate the nervous energy, reduce the temperature of the body, and destroy its vigour or capability of resisting the influence of external agents.

Cold water on an empty stomach excites reaction, so that the blood is immediately determined towards that organ in greater abundance, and the juices peculiar to it are secreted more largely. This reaction being communicated by sympathy to other parts of the body, all the secretions are increased, and, for the same reason, absorption becomes more rapid. There is, therefore, along with the sensation of hunger, which immediately follows, a greater demand for nourishment. Those portions or particles which have been used are speedily carried off and ejected, and the reparation of the daily wear and tear is more perfect, or, in other words, the body is better nourished. This speedy loss and reparation of the body constitutes one of the principal distinctions between youth and old age; it is the reason why there is a larger appetite, and a greater demand for nutrition in youth, and why young animals cannot endure the privation of food for so long a period as those more advanced in life.

As cold water increases the appetite by reaction, so, for a somewhat similar reason, provocatives and other irritants, as a dram taken immediately before dinner, or condiments, and spiced or salted meats, create, what may be justly termed, a false appetite,—an appetite for which there is no demand. The nerves being irritated, there is an increased determination of blood and secretion of gastric juice, causing the sensation of hunger; a larger quantity of food is consumed than what is required for the reparation of the body; it is, there-

fore, never completely assimilated. These unassimilated particles, together with such used and useless parts as have performed the functions of nutrition, are never entirely absorbed and ejected, but remain in the system, laying the foundation of chronic disease. Stimulants of this description are of short duration, rapidly exhaust, and, to prevent the evils of indigestion, must be frequently renewed. Thus he who begins his dinner with a dram finds it necessary to follow it up with the bottle. The peristaltic motion of the intestines becomes impaired along with the stomach, and other irritants in the form of purgatives are then had recourse to, in order to excite their action, and relieve them of the load with which they are oppressed. All the functions are imperfectly performed; the ill-concocted chyle is badly assimilated; the worn and wasted parts are but partially excreted or carried off; and the blood, therefore, becomes impure. For the immediate preservation of life nature makes an effort to dispose of these impurities; they are, in consequence, deposited on the joints and extremities, constituting gout, which salutary crisis affords some temporary relief, or otherwise on the liver or some other organ, when a diseased action ensues, terminating in an organic lesion, which ultimately destroys life. The nerves necessarily suffer from this condition of the blood; they give rise to a constant feeling of feverish and restless uneasiness, and, sinking into a state of desponding melancholy, the patient too often increases his malady by seeking relief in the stupifying effects of fermented liquors or ardent spirits. Thus by indulging a vitiated taste we become the martyrs of our own imprudence, and drag on for years a painful existence, suffering from gout, gravel, stone, liver and other diseases.

It is not merely because water is the natural drink of all animals, that its use is to be recommended, or that it improves digestion, and is a real tonic; but in addition to these it has the highest functions to perform, and is indispensable to the

existence of organic matter. It constitutes seven-eighths of the entire weight of the animal body; it is the great solvent of all other bodies, and, as such, becomes the vehicle of nutrition; it dissolves those particles which are absorbed, either to be reconverted into blood, or to be carried out of the system; and, in the subtle, elaborate, and inimitable chemistry of the living body, it is in part decomposed, and thus, perchance, becomes of itself a source of nutrition. Hence, with those who die from a total deprivation of meat and drink, the sensation of hunger shortly gives way to that of intolerable thirst, and, if water can be obtained, the life of the individual is not only greatly protracted, but every particle of fat, much of the muscular fibre and many other parts are absorbed, dissolved, and reconverted into blood, so that the body is itself consumed, and the sufferer dies in a state of extreme emaciation. On the other hand, without water, the blood soon becomes unfit for the purposes of reparation; the nerves can no longer secrete their own peculiar fluid or energy; they, the very seat of the vital principle, become diseased, and life is extinguished in a raging fever, and the madness of delirium.

As water is the natural drink of every animal, it is surprising how much pains civilized man bestows to sophisticate this pure, life-restoring fluid; it seems as if by the employment of so much art in the preparation of meat and drink the progress of civilization were marked by the greatest divergence from the laws of nature, as something directly opposed,—or that the subtlety of the one were superior to the unpretending simplicity of the other,—as if the irritants or stimuli we daily use were necessary, as ballast to a ship, to enable us to steer our course and escape being foundered in the ocean of life. Hence this natural drink becomes disguised under various forms, and, instead of gliding smoothly along, the vital powers are constantly struggling against an under current of counter irritants, until at last this wonderful piece

of mechanism is swallowed up in the vortex of disease. Such is the penalty imposed upon us for our departure from the laws of nature,—a life of suffering, or rather a prolonged and lingering death. Neither does the evil terminate in death, for “the sins of the fathers are visited upon the children unto the third and fourth generation.” Hence it is that so many come into existence procreated with the germs of disease within them,—a puny race born to suffer. Does it not, then, behove us all, as far as the social condition of society will permit, to return to the pure simplicity of our primitive parents?—to quench our thirst at the living stream, and satisfy the wants of nature with homely, wholesome food? “What astonishing miseries,” eloquently observes the excellent Dr. Cheyne, “wealth and vice bring upon human kind! when nothing but pain and melancholy, frightful ideas, horrible dreams, and black despair remain!—who would not have parted with the richest delicacies, the most delicious wines, and the most enticing vices, for a plain, simple diet, an useful laborious life, freedom from pain, and a good conscience?” How many there are who pass through life in the full persuasion that, having performed the moral obligations of society, and attended to those of religion, they have performed all that is required of them, utterly forgetful that, in addition to their duty towards their neighbours, there is a duty they owe to themselves, and that, if they should not injure others, neither should they injure themselves, but use all things in moderation; for as Scripture tells us, “by surfeiting many have perished, but he that taketh heed longeth his life.”

Upon the principle of abstemiousness, fasts have been inculcated as a religious ceremony amongst eastern nations from the most remote antiquity, and in appearance are still preserved. Occasional total abstinence corrects the effects of frequent repletions, or over-feeding. They grant a period of perfect repose, and thus afford nature an opportunity of relieving herself; she is thus enabled to diminish the *plethora*

of the vessels, and to eliminate that which is hurtful. It may also be observed that these fasts were ordained at the spring and fall of the year, when evacuants, as blood-letting and alteratives, were considered by later physicians highly beneficial, and were often thus periodically prescribed.

Pure water and simple food generate wholesome blood, by which the body is nourished; yet it is not alone by what we eat or drink that we live, but also by the air we breathe, and we may be said to a certain extent to breathe by the skin as well as by the lungs. By simple food, and by freely exposing ourselves to the full influence of the atmosphere, that is, by air, exercise, and diet, we are enabled to maintain a due equilibrium in the circulation, or, what is the same thing, in the energy of the nervous system. By this exposure the skin becomes equally unimpressible to the sudden alternations of heat or cold, and, by thus duly performing its functions, it preserves an equal temperature in all seasons, and in all climates. The *vis nervosa* governs the circulation of the extreme vessels, and regulates the temperature by irradiation and insensible perspiration. Those who perspire the most profusely by heat or exercise, are also chilled the soonest by cold; and, in either case, the reason is the same—the want of nervous energy. Hence the vessels, from their relaxed state, become shrivelled or collapsed in winter, and pour forth copious streams of perspiration in summer. The debilitated frame is incapable of opposing a sufficient quantity of resistance in its extreme vessels either against the impetus of the circulation, or the influence of external agents. It is the weakest horse which sweats the soonest, whilst the one in high condition will trot many miles without a hair being turned. The healthy man, accustomed to labour, can work or walk without suffering from fatigue or perspiring from his labour; whilst the infirm is soon exhausted and deluged with perspiration. The evaporation, caused by profuse perspiration in the exhausted and overheated body, acts as a substitute

for the deficiency of nervous energy, which not only generates animal heat, but regulates its quantity, carrying off its excess by insensible perspiration, and perhaps more especially by radiation. To increase this cooling process nature has granted the Ethiopian a black skin, more abounding with vessels, pores, and nerves,—possessing a more exquisite sense of touch, and, in short, more highly organized than that of the European. This colour and organization enables him to endure the burning rays of a tropical sun,—to preserve an equal temperature in the suffocating atmosphere of the torrid zone, whilst his soft, black, unctuous skin remains cooler than that of the European, or than the heated air he breathes; and, perhaps, for the same reason is he enabled to inhabit the mouths of the rivers of Africa, or cultivate the rice-fields of America with impunity,—localities so fraught with certain death to the European,—the miasmata of disease being conducted out of the system by insensible perspiration and radiation, as rapidly as they are absorbed into it. The difference of colour and organization between the European and the African throws some light upon the physiology of the skin, or the functions it has to perform, and the way in which they are performed. The European, with his white, or, more correctly speaking, with his blood-red or rosy skin, (for if constantly exposed to the air it would become such) is better enabled to endure the cold climate of the north. There are fewer nerves, fewer pores, and a total absence of colouring matter. The sense of touch is less delicate, therefore he is less sensible of the impression of cold; the pores are constricted, consequently the insensible perspiration is diminished, and, from the absence of colour, there is less radiation; therefore the heat is retained, whilst the cold itself reacts as a stimulus, producing a glow of warmth, and forcing the circulation into the minute vessels. Thus it is that Nature, by her admirable adaptation of this organ to circumstances widely different, has, in point of fact, rendered it a nicely

graduated sliding scale, which preserves nearly the same standard of temperature under every climate.

Such are the functions of the skin in the healthy man ; but with the infirm it loses this pliability of adaptation, the nervous energy becoming everywhere deficient. The secretions are, therefore, more or less imperfectly performed ; the relaxed muscular fibre is rapidly exhausted of its *vis insita* ; and, for the same reason that the blood is not propelled with impetus in cold weather, the insensible perspiration and radiation of caloric continue diminished even in warm ; and, to avert the impending danger of a fever, the pale relaxed skin is either bedewed with a clammy sweat, or pours forth a copious perspiration, so that the body may be cooled by the process of evaporation. With him mental emotions or bodily exertions soon render the nerves agitated and tremulous. The respiration and circulation participate in this disturbance ; and, in cases of long-continued laborious exertion, such as running, the heart beats with violence, the air is drawn in with deep and hurried respirations, until he is compelled to cease from pure exhaustion. He then gasps for breath, the heart continues to palpitate, and the perspiration pours down. The muscles become exhausted of their *vis insita*, and, did not nature thus kindly put an end to the strife, the vital powers would be speedily overwhelmed with universal congestion by the vast influx of blood to the heart and the lungs, in order to receive the vivifying influence of the air ; whilst the brain and the larger vessels would be indirectly involved, thus adding to the catastrophe about to take place. Hence, to recruit and restore the diminished energy of the system, rest becomes necessary after labour, and, for the same reason, nature has ordained the repose of sleep as indispensable to all.

The skin abounds with pores, nerves, and vessels of the finest dimensions, which are incomparably more numerous towards the surface than at the base. It is here, at the

upper face, where it is the most highly organized, and where its principal functions are performed. This fact points out the great importance of paying every attention to its external condition. By ablution and friction, the pores are not merely opened and purified, but the extreme nervous *fibrillæ* are excited, the temperature increased, and its functions thus promoted and restored; since, by its innumerable nerves, it is connected by sympathy with every part of the body, so does it at once indicate the slightest change; and, as the laws of sympathy are mutual, if the skin is affected by the suffering parts, so does it, when restored to its healthy action, exert a similar influence over those as well as over all other parts. Hence the refreshment experienced by men and horses from shampooing, washing and rubbing down after great fatigue.

It was from such observations as these that frequent ablutions became enjoined as a religious ceremony conducive to the health of the body. For, in the primitive state of society, the duties of the priest, the physician, and the lawgiver, were united in the same individual, as with the ancient priests of Egypt, and the Levites of the Jews, and as we find it even at present prevails amongst the Equimaux Indians and other barbarous tribes. Hence the rites and ceremonies prescribed in the second book of Leviticus constitute the Jewish code of sanatory laws. Of such importance was washing the body with cold water considered, that it became a religious ceremony with almost every known nation of antiquity. It was afterwards typically enjoined by the Saviour, adopted by Mahomet in the fullest manner, but was, except on certain occasions, singularly omitted by Moses, on which account the Jews were always an unclean people, subject to cutaneous, paralytic or rheumatic and other diseases. Washing the body naturally became symbolical of the purification of the soul, and cleanliness was esteemed a virtue next to godliness. Thus, in the baptismal ceremony of the Eleusinian mysteries, the priest, exhorting the neophyte to lead a pure

and holy life, pronounced the famous formula, supposed to possess a mystic charm from being so constructed as to read backwards—

Νίψον ἀνόμματα μὴ μόναν ὄψιν.

“ Wash the sins from thy soul, not merely the filth from thy face.” The neophyte, having passed through various ordeals, having washed or purified his body, and having typically assumed a robe of unsullied white, was said to be regenerated, and was then initiated into those mysteries which strictly enjoined the practice of every virtue, and the worship of the Deity in unity—the bountiful God of Nature, revealed beneath the emblem of Ceres.

Sir John Floyer reports that, from baptismal immersion and the frequent washing of children with cold water in former times, the rickets was a disease unknown to our Catholic forefathers. It was a common saying, that no child has the rickets unless he has a dirty slut for his nurse. He further observes, that all nations, previous to the refinement of civilization, were in the practice of washing their new-born children with cold water.

It is perhaps difficult to ascertain the full importance of the skin, and the extent of its sympathetic influence. As the index of disease, it may be surmised that the due performance of its functions contributes most largely to the maintenance of health. When those functions are entirely suppressed, as by a coating of impermeable varnish, life itself is speedily destroyed. The lungs seem to sympathize with its altered condition, the animal heat is no longer generated, and death follows, as if from asphyxia. We know that many surprising cures have been accomplished simply by dry friction, which increases the absorbent power of the veins and lymphatics, and greatly promotes the circulation; for which reason it is strongly recommended by Dr. Cadogan, especially for such as are unable to take exercise. The whole of the views of

this excellent author are so perfectly consonant with my own on the origin and treatment of chronic diseases, that I am tempted to transcribe the following :—

“ It is upon the minutest and almost invisible parts of our body our best health, strength, and spirits depend : these fine parts, commonly called capillaries, are little pipes or tubes, the extended continuation of the larger vessels, through which the finer parts of the blood must continually pass. Now the strength of the heart or arteries alone, in a sedentary course of life, is by no means sufficient to keep up and perpetuate this motion through these capillaries, but requires the assistance and joint force of all the muscles of the body to act by intervals, compress the veins, propel and accelerate the circulation of the whole mass of blood, in order to force and clear these pipes. I would ask any reasonable person, whether he can conceive it possible to substitute any medicine to be swallowed that shall act upon the blood and vessels like the joint force of all the muscles of the body acting and re-acting occasionally in a regular course of moderate daily labour or exercise. Unless this can be done, I will venture to pronounce there is no such thing as a lasting cure either for gout or any other chronic disease. A certain degree of exercise or bodily motion is necessary, at intervals, every day, to raise the circulation to that pitch that will keep the fine vessels open and the old blood pure, and also make new from the fresh juices. If the patient can neither walk nor ride at all, he must by degrees be brought to do both by the assistance of others. Let a handy active servant or two be employed to rub him all over, as he lies in bed, with flannels or flannel gloves, fumigated with gums and spices, which will contribute greatly to brace and strengthen his nerves and fibres, and move his blood without any fatigue to himself. This may take up from five to ten minutes at first, but must be repeated five or six times a day, supposing him totally unable to help himself. But if he can walk a hundred yards

only, it will forward him greatly to walk those hundred yards every two hours; and if he can bear a carriage, let him go out in it every day, until he begins to be tired. Thus he must go on rubbing, walking, and riding a little more and more every day, stopping always on the first sensation of weariness to rest a little. This is recommended with an intention to dislodge and throw off all remains of crude gouty concretions that may have obstructed his joints, or lain concealed in any of the *lacunæ* or recesses of his body; to free the circulation in *minimis*, and all its secretions, perspirations, and discharges whatever; and though this intention can never be but very defectively answered by medicines, it may certainly be assisted and greatly promoted by a few well-chosen deobstruents and sweeteners, that, like putting shot or gravel into a bottle, with a good deal of agitation, will greatly help to make it clean, but without agitation will do nothing. This friction may seem but a trifling prescription to those who have never tried it sufficiently, but is of the utmost consequence, and its effects are amazing, especially to all those who are too weak to use any muscular motion themselves. A little friction may have little or no effect; but long continued, and repeated often, with fumigated flannels, it will do more to recover health, and support it afterwards, than most other things or methods. It promotes circulation and perspiration, opens the pores, forces the fine vessels, strains and purifies the blood, and this without the assistance of any internal stimulation. It is this that keeps horses in tolerable health with very little exercise."

These well-known effects of dry friction suggest an improvement in the water-treatment, which would, to a great extent, obviate the danger of congestion, and be certain to produce the most salutary re-action, without the risk of fever. It is partly by these frictions that Schrott of Lindewiese so often succeeds in cases which Priessnitz has failed to cure; and by them the late Mr. Grover, of Oxford, cured so many

cases of white swelling and indurated tumours. There can be no doubt they would be found serviceable in every stage of this treatment, and are applicable to every, even the most delicate, constitution. It may also be observed that they would greatly promote the chemico-vital action of the skin in the generation of carbonic acid gas; and perhaps it is from this action that the beneficial results derived from it are chiefly, if not altogether, obtained; for the venous blood of these minute capillary vessels being converted into arterial, it becomes more stimulating, an additional quantity of caloric is extricated, and the nervous tissue acquires additional energy, or *vis nervosa*.

It has been stated that the success of the water-treatment depends on the derivative effects of re-action; and, from the precaution Priessnitz takes to combine friction with cold water, as well as his injunctions that the patient should feel warm, it certainly appears he has some vague notion of the danger of congestion, notwithstanding he denies the fact. When it is remembered he has often changed his practice, which could only have arisen from the want of success, and that, even now, he has no fixed or certain method in his treatment, it must be admitted that, so far from "seeing into the human body, as if it were made of glass," his ideas are altogether obscure and confused. In spite of the assertions of the creatures he keeps in his pay to sound forth his praises, to tell the patients that in the management of the "crisis" he is omnipotent, that it is then he shines forth like a god, and acts instinctively with pure intelligence; yet it has been seen that in the hour of danger he is utterly at a loss how to act, and, as in the case of the unfortunate Miss S. S., when for the last two days he attempted nothing, he becomes the silent spectator of death. In this case, as well as in others, he screened himself from the imputation of ignorance, by asserting that his orders had not been complied with. It has also been seen, that at other times, when he perceives the case is

hopeless, or dangerous, he either recommends the patient to return home to get more strength, or otherwise becomes inattentive; and, should the patient not leave of his own accord, he gets up a quarrel that his orders have not been followed, so that he may have a pretext to dismiss him, to die elsewhere. Thus he screens himself from blame, justifies his conduct, and saves his reputation for infallibility: thus was Dr. Bulard dismissed to die at Dresden; and thus was it pretended that the Princess Leichtenstein, Miss S. S., and others died through their own fault. It is clear these fatal results can only be attributed to his ignorance of the effects of his own remedies; to his boasted ignorance of physiology, "that nature refuses all respect for what is now denominated learning, nay, *tramples upon revealed sciences*, particularly on that of medicine;" and to his ignorance, that the oft-repeated stimulus of reaction impairs the nervous system, and causes feverish excitement; and that this debilitated state of the nerves predisposes to the congestion, which follows the long-continued application of cold. Had Miss S. S. quitted Graefenberg before the more violent means had been adopted, her general health might have been permanently improved; or had the Princess remained in the hip-bath only two or three minutes, the re-action would have taken place with greater certainty, and she might have escaped the congestion and inflammation which destroyed her life. Even in my own case, had I rigidly followed the treatment prescribed during the second paroxysm of the gout, viz. been twice a day placed in a couple of moist sheets, and rubbed each time for half an hour or longer in the demi-bath, there would have been great reason to apprehend a congestion falling on the lungs or some other organ,—a danger constantly present to my view. As it was, I became thoroughly exhausted; I felt, on being replaced in bed after remaining so long in the cold bath, as if every particle of warmth had been abstracted from my body, and was so reduced as scarcely to be recognised.

Are not these facts sufficient to point out the danger of the practice pursued by Priessnitz?—a danger which arises from his false theory of disease, his erroneous views of the action of cold, and his utter ignorance of physiology.

To the causes of congestion already recited might be added also that arising from unskilfulness in applying the bandage so usually worn over the stomach. For if it be not thoroughly wrung out and sufficiently covered with folds of dry linen to retain the warmth, the whole will become readily wet, and the blood might be thrown or congested upon the lungs or intestines by the cold arising from evaporation.

In addition to the evil consequences of congestion, those which sometimes arise from drinking immoderate quantities of cold water must also be noticed. From ten to twenty, thirty, and even forty large tumblers are drank in the course of the day, according to the strength of the patient, and his capability to swallow them. This large quantity of water suddenly taken into the system, sometimes occasions vertigo, resembling drunkenness, very difficult to get rid of, and accompanied with intense headache. Three or four cases have also occurred of asphyxia, the patient, with his stomach greatly distended, being thrown into a state of rigid spasm or catalepsy. In these cases the spasm was resolved after much perseverance, either by friction with cold water, or by directing a stream of water from a fire-engine upon the body of the patient. One of these cases, that of a Bohemian actress, acquired Priessnitz the reputation of raising the dead to life. Whether any occurred in which the patient did not recover, I was unable to learn.

From drinking this large quantity of cold water, the urine, for the first three or four days, is limpid, colourless, highly stimulating, inodorous, and apparently without urea. It seems, as before stated, as if the kidneys had sufficient

work to perform in relieving the system from this sudden influx of water, without being able to separate the urea from the blood, which there is reason to believe is the fact, and that the two operations are distinct. The bowels remain costive, and sometimes vast quantities of flatus, free from odour, are generated, as if from the decomposition of water by the mucous membrane. Afterwards a resolution of the spasm generally takes place, accompanied with a slight diarrhœa and griping pain. The stomach then no longer feels distended, and the urine, secreted more slowly, is retained, and recovers a pale straw colour. In short, the system now accommodates itself to the change which has taken place. The water is readily and immediately absorbed, penetrating mechanically, or by capillary attraction, into the various tissues, to be carried off as much by the skin and the lungs as by the kidneys.

There can be no doubt that this quantity of water, with which the body may be said to be soaked and saturated, greatly promotes perspiration. A horse allowed to drink copiously before setting out on a journey, soon sweats profusely, and loses his wind or becomes short breathed. When the system has become accustomed to the change, no injurious effects are observed to occur during the treatment, and in most cases it may contribute towards the cure. But it sometimes happens, after the patient has left the establishment, that he continues to drink as largely as before, under the idea that the water will carry off any peccant matter which may continue to linger in the *lacunæ*, or hiding holes of the body, and at the same time returns to his former sedentary mode of life. From this sudden discontinuance of exercise, sweating and reaction, conjoined with debility, the functions of the skin and mucous membrane become partly suppressed, and the water, penetrating into the cellular tissue, instead of being carried off, remains there located, constituting the disease of dropsy, or anasarca. In this condition of the skin and

mucous membrane, the thirst is increased, and the disease nourished, so that well might the poet exclaim,—

“Crescit indulgens sibi dirus hydrops,
Nec sitim pellit.”

The water treatment has been much decried in Germany on account of this relapse, one of extremely rare occurrence, and arising for the most part from the patient's own indiscretion, in the same way as congestion is to be attributed to the ignorance and unskilfulness of the practitioner. It is certainly unjust to draw conclusions from an abuse, or to undervalue that which is good in itself because evil sometimes results from it. How many have been poisoned with opium and calomel?—and does not antimony derive its very name from the monks of Einsiedlin having been poisoned by the experiments made upon them,—yet who, on that account, would exclude these sheet-anchors of the physician from amongst the remedies in daily use? For the same reasons, since the good effects of the water treatment are intrinsically its own, and the bad arise solely from its misapplication, surely its medicinal use is not to be disregarded because death sometimes ensues either from congestion or from relapse.

Fully aware of the danger of congestion, Sir John Floyer repeatedly cautions his reader against the long-continued application of cold. “The patient is not to stay in the bath above two or three minutes, as he can easily bear it; and to go in and out immediately on the first bathing, after an immersion of the whole body.” He says, “the way to prepare the body for cold baths, if very tender, is to wash it all over with warm water first, about the spring time in May, and so every morning use cooler, until it can bear the sense of very cold water.” He commends the practice of Galen and the ancients in having the body prepared by friction in a warm room, and rubbed with oil before plunging into the cold bath, with the additional use of the *strigillum*, or

scraper, until it became moderately red; but it does not appear he ever adopted this practice. "An excess in cold bathing occasions cramps, rigors, and fevers; all these are prevented by staying in no longer than we can bear the sensation of cold water without excessive chilliness, and by the use of friction before and after. These inconveniences the Romans prevented by friction and unction, and by heating the body with moderate exercise before." In all diseases which require sweating, as gout, rheumatism, rickets, palsies, and "obstructions of the nerves," he judiciously orders it to be done after the cold bath, which is contrary to the practice of Graefenberg, but strictly according to that which prevailed at Willowbridge, and all the cold springs noted for the cure of these diseases. "Immediately after cold baths the sweats are produced, if we commit the patient to a warm bed; but a longer use of cold baths stops all evacuations;" that is, if the patient remains in too long he becomes over chilled, and the reaction does not take place. In order to insure the reaction, he used to order his patients warm ale or mulled wine, or posset after the bath, as practised at the springs. Thus Mrs. Piser of Repton, who, being unable to walk, was dipped three times in a chair at each bathing, and, on being put to bed, "she sweat plentifully after it, *by the help of warm ale and spirits of hartshorn*;" and thus also at St. Mungo's Well, the rickety children, who were dipped in their shirts and night caps, and then wrapped up in warm blankets with their wet clothes on, drank some sack or mulled wine immediately before and after dipping.* The use of the wet bandage and

* This mode of bathing in a shirt appears to have been of great antiquity. Dr. Hahn makes mention of it as practised in his time on some particular days, as Good Friday, and it was found serviceable in skin diseases, the patient either allowing the shirt to dry on his back, or was well covered up in bed. Sir John Floyer alludes to a similar custom at Willowbridge: "There is a dangerous practice, of which I have heard some patients complain: they wear the wet shirts, in which they bathed, all day afterwards, by which some were over chilled; but I have heard of others that were more strong, who bore that

moist sheet, first introduced by Dr. Hahn, and subsequently adopted by Priessnitz, were great improvements on bathing in a shirt. It is probable this mode of sweating, together with the use of cold bathing, went out of vogue on the introduction of the fatal hot regimen in the cure of fevers; yet it continued to be practised, at least amongst the common people, at the cold springs in the North of England, celebrated for the cure of rheumatisms, intermittent fevers, strains, rickets, cutaneous and nervous diseases, down to the times of Floyer. He says, "the patients were immersed at all ages, from six months old to eighty years, and, whilst in, women were employed *in rubbing them, particularly the diseased parts*. Children were merely dipped, but adults remained as long as convenient, from a quarter to near half an hour. They used no particular diet, but had a draught of warm ale or sack after they came out. The sick went to bed and sweat for two hours, whilst the healthy took exercise, finding themselves in a warm glow, and more active than before." The mode of dipping children is thus described: "a woman plunges the child over head and ears, then rubs it all over, especially the limbs, back and stomach; they plunge and rub them thrice, and this is called one dipping; they must not be above three minutes in doing this. If the children do not sweat, they put their maids to bed to them." All the writers on cold bathing agree that the principal benefit is derived from the shock given to the nervous system, and not from the long continued application of cold; Dr. Baynard also observes, that "some of the best cures done by the cold baths, are from a sudden plunge overhead, and then immediately getting out. Staying in long weakens the force of the nerves, and the benefit of the immersion is lost."

practice without any injury." It is probable this custom might have been introduced from Germany by the Anglo-Saxons. The wet shirt seems also to have been employed for sweating by jockeys. "Dip the rider's shirt in cold water, and after it is put on very wet, lap him in warm blankets to sweat him violently, and he will lose a considerable weight, a pound or two."

None of the authors on cold bathing give directions about the quantity of water to be drank, but seem to leave it to the discretion of the patient, deeming it sufficient to recommend him to abstain from fermented liquors and high seasoned dishes, and to use moderation in animal food. Sir John merely observes it is necessary to drink water to prevent a relapse. Dr. Baynard recommends drinking water *moderately*. From hence it would appear that these eminent physicians considered the cure of chronic diseases ultimately depended as much on the abstinence enjoined as upon the medicinal virtues of the water drank, and relied principally upon purifying the system of morbid matter by sweating, and upon restoring the healthy tone of the nerves by the sudden impression of cold. In acute diseases, as well as with others, water was always ordered to be drank abundantly. "It is," he further observes, "a curious remark of Celsus, that cold bathing is most useful in wet weather, when all people are sensible of a heaviness and dulness of their spirits. Water fowl and small birds usually wash themselves in wet weather," as if to fortify themselves against the change.

From these extracts, and by referring the reader to the Appendix for further information, I leave him to judge of the superiority of the practice in use amongst our forefathers, revived and adopted by Sir John Floyer, over that pursued at Graefenberg. The one is rational and physiological, whilst the other is in a great measure capricious and empirical. In the hands of Sir John and Dr. Baynard, it appears to have been eminently successful; in those of Priessnitz, there is, out of the numbers who flock to him, scarcely one in twenty cured. None of the worst cases we meet with in Sir John Floyer's work required a longer treatment than five or six months, whilst at Graefenberg they are protracted to three or four years, which can only be attributed to the excess of cold water, both inwardly and outwardly applied,

and to the unwholesome food. The long-continued frictions in the half-bath, and the frequent repetition of the moist sheet, are debilitating processes, which tend to congestion. In a high fever, where it would not be necessary to repeat these operations more than a few times, there can be no doubt they would be found highly useful; but in chronic disease the case is widely different; for, from these long and frequent applications, the skin becomes benumbed and insensible, and the reaction takes place with difficulty, or frequently not at all.

It is impossible to lay down rules applicable to every case; yet the following may serve as a general outline. It is at all times important that the reaction should take place immediately after the cold-bath, and it would be well to administer some warm drink or cordial, in order to secure this result. With the very young, the aged, and the infirm, a single plunge is sufficient; and in most cases, especially gout and rheumatism, the patient should sweat after the cold bath. Dry friction, especially after sweating, should in every case be combined with the treatment, not only to dry the body, but to promote the circulation, and thus prevent a collapse of the vessels. The morning is the most fit time to produce a healthy reaction on the empty stomach, by drinking a tumbler of cold water; and, at the same time, the entire body should be washed with a wet sheet, towel, or sponge,—the wet sheet is to be preferred, from the sudden and entire application giving rise to an immediate reaction. The patient ought to take exercise before breakfast, which should be a slight repast, as the name implies, as oatmeal porridge, or bread and milk; the food should be light, simple, and easy of digestion; and, in the majority of cases, it would be found sufficient merely to use water as the ordinary drink. When the reaction takes place with difficulty, the heating-bandage should be applied hot instead of cold, the advantage of which I have had frequent opportunities of observing, both in my own person as well as in others; and, let it be ever borne in

mind that the cure of nearly every chronic disease depends as much upon air, exercise, diet, and cheerfulness, as upon the remedial means employed, which, without these, will, in the majority of cases, be of little avail.

However excellent the water treatment may be in a great variety of diseases, yet it must be admitted, as an undeniable fact, that it is far from being the universal remedy which its advocates pretend. In the hands of Priessnitz and his followers it has become a quack medicine—an universal *nostrum*—and, like every other remedy indiscriminately used, is frequently as productive of injury as of benefit. Used in moderation, and judiciously combined with other remedies, there can be little doubt but the greatest advantage would be derived, especially when united with the occupation and amusement of a large establishment.

APPENDIX.

APPENDIX.

EXTRACTS FROM THE WORK OF DR. HAHN, ENTITLED, "OBSERVATIONS ON THE HEALING VIRTUES OF COLD WATER, INWARDLY AND OUTWARDLY APPLIED, AS PROVED BY EXPERIENCE."

DR. JOHN SIGMUND HAHN was town-physician of Schweidnitz in Silesia (about fifteen German miles distant from Graefenberg) and was the first German physician who introduced the water cure into his native country. He derived his information on the medicinal virtues of cold water from the English physicians, Sir John Floyer, Dr. Baynard, and Dr. Smith. The first edition of this work appeared in 1738, a second in 1743, a third in 1745, a fourth in 1754, and a fifth in 1770 under a new title, in consequence of the water cure having become at that period antiquated and unpopular. Professor Oertel republished this work, which he accidentally met with in 1804.

Dr. Hahn's Preface.

"The world has now endured nearly six thousand years, and its inhabitants attained a much greater age formerly, when they lived on milk, and drank water, than their descendants do at the present day. After Noah invented the art of fermenting the juice of the grape, and the Egyptians that of brewing beer, mankind abandoned the use of pure water for these palate-tickling, but health-destroying, beverages. Notwithstanding the duration of human existence became greatly curtailed, and a host of painful disorders appeared in hostile array, yet these real and manifold evils were considered more than compensated for by the indulgence of a vitiated taste, and the pleasure of a temporary excitement. Thus did the votaries of Bacchus continue to drink and to suffer,—to sacrifice health and life, at the shrine of Circean pleasure. Unable to abandon this acquired taste and habit, they

endeavoured to persuade themselves that, the painful diseases they suffered, arose from the natural decay of the body, and thus was the remorse of conscience lulled asleep. By comparing wine and beer to medicines the most efficacious in the cure of disease, and the most conducive to the prolongation of life, they prevailed on others to follow their own pernicious example, despising pure water, they declared that it weakened the nerves, distended the stomach, and impaired digestion;—that its coldness was the emblem of death, that it diminished the natural heat of the body, and ultimately extinguished the spark of life. By these fallacious arguments they removed every doubt, and others, readily persuading themselves of their truth, continued to pursue a short-lived course of pleasure.

“As virtue is ever calumniated by vice, thus was the good repute of water destroyed to prepare the way for the gratification of every sensual indulgence. Hence tasteless water ceased to be grateful to those whose appetites had become depraved by wine, beer, and spirits; and in this manner this wholesome beverage, which could be had everywhere, and in abundance for nothing, was displaced by the expensive, alluring, and pernicious juice of the grape. Many physicians also acquired a taste for these artificial, exciting liquors, and laid aside the use of water in the cure of disease. We oft recommend to others that which we like ourselves. Hence they medicinally prescribed wines to their patients, together with powerful drugs. All this tended to their benefit, for their practice greatly increased with the introduction of wine and beer, whilst on the other hand there was but little to be got by medicine so long as men continued the use of nature’s wholesome beverage and universal remedy—common water.

“What the desire of wealth and the love of pleasure failed to accomplish, art and folly brought about. For open-mouthed folly easily induced the credulity of mankind to believe the laborious works of art superior to the spontaneous productions of nature. A few simple herbs, culled from the fields, constituted the first apothecary’s shop, before spirits, essences, tinctures, or distilled waters were known, save such as dropped from the clouds, as flowed in the running stream, or as were distilled from the dews of heaven. These simple gifts of nature were beneath the notice of men, whose minds were inflated with the pride of science, and the wonders of art. They studied how by the torture of fire, and an elaborate chemical process, to change the properties of the most common things. On

these new products of art they bestowed the loftiest titles, and, as though partaking of the Divine essence and possessing heavenly virtues, they were esteemed the elixirs of life and the panaceas of every disease. Thus was the admiration of gaping folly excited, and men readily became the dupes of their own credulity.

“To such an extent has the appetite for these artificial and chemical preparations arrived in the present day, that those who prefer the simple productions of nature are turned into ridicule, and looked upon as simpletons; and the physician, who uses them in his practice, is called an old woman,—a mere soup and water doctor. Under these circumstances many an honest physician is obliged to follow the reigning fashion, and, borne along with the stream, is compelled against his better judgment to yield to the general opinion of the multitude, who judge from outward appearances. Thus the use of cold water has fallen more and more into neglect and oblivion; so that now it has become a matter of surprise, and people cross themselves, when told that by drinking abundantly of cold water they may cure a raging fever, or that, by freely washing and bathing their limbs in it, the pain they suffer will be relieved, and their rheumatism disappear.

“The prejudices against cold water are now so deeply rooted that it becomes extremely difficult for the honest physician to eradicate them. I have often experienced this difficulty, and know the pains it requires to lead back perverted minds into the right way, to dispel their fears, and convince them by ocular demonstration of the efficacy of cold water. Yet it is pleasing to reflect that, in every age in which medicine has been practised, there have been found a few upright physicians, who, having had sufficient courage to resist the prejudices of the credulous and to despise the scoffs of their colleagues, were not deterred from recommending, among other simple remedies, the inward and outward use of cold water, to the great benefit of their patients.

“Cold water has in the present age happily acquired a high degree of pre-eminence, the late Dr. Schwertner having translated the best English and French works on the ‘medical virtues of cold water,’ published the collection in six volumes, under the title of *Medicina Vera Universalis*. In no part of Silesia have the principles of the water treatment made a greater progress than in my native town of Schweidnitz; and it would be ungrateful in me not to mention that my deceased father, Dr. Sigmund Hahn, above fifty years a practitioner here, was

the first, who not only recommended the inward and outward use of water to his patients, in different disorders, but who also, in spite of existing prejudices, and the opposition of his colleagues, from the diminution of their practice, brought it again into repute. He had the satisfaction of seeing many upright physicians follow his example, and also great numbers of people both here and in other parts of the country, who, conquering their fears and aversion, began to drink freely of cold water, both in health and in sickness, as well as washing and bathing in it, to their infinite advantage. He further set his patients a good example, not only by drinking cold water, but also by bathing in it in his 'old age, even when the weather was inclement; and, in addition, publicly avowed his water principles, in a treatise he published on the subject, entitled, *Psychrolusia Veterum Renovata*.

"It is not to be wondered at, if young cocks imitate the crowing of the old, and, having had a few years' experience in my father's school, I have not only imbibed his principles and opinions, but have in the course of my own practice seen the effects of the inestimable and never-to-be-sufficiently-praised virtues of cold water, in various difficult and dangerous disorders."

The author thus introduces his remarks on the properties of cold water:—"It is," says he, "limpid, colourless, tasteless, penetrating, dissolvent, incorruptible, and unchangeable. It is not only fluid itself, but the cause of fluidity in other bodies. From its extreme tenuity and infinite divisibility it is capable of penetrating the hardest bodies." He then quotes the celebrated experiment of the Academia del Cimento, that it penetrates the pores of metallic bodies, and is incompressible, sweating through the golden ball rather than allowing itself to be condensed or compressed. He then relates the vast force of capillary attraction. "A strong dry wedge was driven into a hole bored into a stone in a millstone quarry, which being moistened and swollen with water the rock was riven asunder as well as if it had been blasted with powder, so that the resistance of the rock was not sufficient to compress the water soaking into the plug, or to prevent the plug from expanding. Hence water penetrates into all the parts of the body. It is soft or bland, and may be applied to the most delicate parts, as to an inflamed eye, without causing any pain, except such as may proceed from its being either too hot or too cold. It does not ferment, and may be kept many years in well-closed vessels without undergoing any change; which cannot be said of any other liquor.

“ It is from these properties that it exerts its powers on the human body. Being limpid, it is in continual motion, and presses upon all things with which it is brought into contact; that as every part of the body continually requires a fresh supply of limpid matter to prevent it from being dried up or shrinking, water is the liquid best adapted to replenish our bodies, and preserve them in their natural state. It should for this reason be made use of by all, especially by young people during their growth. It not only prevents the different tissues from becoming dry and shrivelled up, but keeps them pliable, and gives them that movement, elasticity, and expansion which nature requires. Being soft, bland, and unchangeable, it does not weaken, corrode, irritate, or otherwise injure any of the most delicate or tender parts by which it is imbibed.

“ A particularly useful quality of water is its power to dissolve, separate, attenuate, and render liquid other substances; it is therefore the fluid best adapted for the common drink of man.

“ Amongst the bad effects resulting from wine may be enumerated its injuring the nerves, causing delirium tremens, and a highly inflammatory state of the system. On the other hand, water, by its extreme tenuity and limpidity, increases the circulation of the blood without rendering it immoderate or violent, like wine or brandy, or thick and heavy, like glutinous drinks, as beer. It not only improves the health and renders the body robust, but greatly invigorates the procreative faculties; in proof of which, Dr. Venette, a celebrated French surgeon, asserts, ‘It gives lovers more strength or vigour than any other drink.’ Hence the old French proverb:—‘*Dix yvrognes ne valent pas en amoureuse affaire un buveur d’eau!*’ The abbots in old times allowed their monks to drink only a limited quantity of water during the day, and strictly forbade them to drink any during the evening, because the abundant use of water rendered them incapable to keep their vows of chastity. It clears the intellect, strengthens and augments the animal spirits, calms and pacifies the violent emotions of the mind. For which reasons students should use no other drink.

“ Cold water is sometimes found, with beginners, to incommode the stomach, and cause a tenderness. This arises from the stomach being coated with a thick layer of slimy matter, caused by the use of beer and wine, which the water dissolves and separates. The now tender and naked stomach, undefended by this mass of slimy filth, is irritated by whatever is taken in, whether meat or drink, and even

water, otherwise so bland and gentle, creates an unpleasant sensation, which may proceed merely from its coldness. But this is sometimes imaginary, and at all times passes off by perseverance; for the water purifies the blood, and so hardens and strengthens the stomach, that those things which before troubled it or were indigestible, no longer cause any pain or inconvenience.

“A very sensible lady assured me, that during a whole twelvemonth she was incommoded with the above symptoms, but by persevering to drink water, they ultimately disappeared, and she now felt how much benefit she had received by so doing; that her former sickly hue was now changed into a healthy colour; that she had become stronger, more brisk and lively, and free from every disease.

“Water does not, as some suppose, weaken the stomach, but on the contrary increases the appetite, as may be seen by the larger quantity of food taken at meals. Those who make this assertion contradict themselves; for a debilitated stomach requires a less, and not a larger, quantity of food. Others imagine that by drinking water they lose their colour and flesh. Even if such were the case, and they did become a little paler and thinner, such a loss is not to be compared to the general improvement of health which is obtained thereby. It yet remains to be shown whether a protuberant stomach, with swollen, flabby, puffed-out cheeks, is to be preferred to a more slender shape, and a thinner face: or whether the rude country glow of health, with rosy cheeks, is not to be preferred to that pale and sickly hue, so much admired by people of fashion. But water-drinkers generally retain their flesh and healthy colour. A few, however, who had swollen, flabby, or spongy flesh, and therefore unhealthy, have in appearance become thinner, and lost their puffiness, having exchanged it for a firm and compact flesh, therefore healthy. Those who from the use of ardent spirits and thick glutinous beverages, as beer or brandy, have got reddened, violet copper-coloured faces, have not by drinking water become pale, but have exchanged their violet or purple redness for a more natural colour. Every reasonable man ought, I think, to be well satisfied with such a change.

“Some complain that after drinking water, they are incommoded with a hardness or obstruction in the bowels. This is of rare occurrence, and admits of the following explanation:—the water, passing through the intestines, strips off the slippery, slimy, agglutinated filth, so that the fœces cannot pass or slip through so readily, or in such quantities as before. This only takes place in the beginning,

and is not attended with any particular inconvenience. By continuing to drink water the natural functions are soon restored, and everything assumes its proper course, as I have frequently observed both in myself and others.

“Trallianus assures us that he has used cold water in dysentery with the best effects; and Amatus Lusitanus obtained equally beneficial results in colic. He mentions the case of the wife of an officer suffering from that disease, who had an inclination for a draught of cold water, which he willingly gave her; she had scarcely emptied the jug before her pains disappeared, as if they had been charmed away, and never returned. A young man, aged twenty-one, suffering under this disease, he not only ordered to drink cold water, *but had a linen cloth dipped into cold water, wrung out, and applied over the stomach.* To the astonishment of those around him he recovered, adding no little honour to the art of medicine.”

(Here we meet with the application of the fomenting bandage, or Neptune's girdle, as it is termed, so much in vogue at Graefenberg.) “Water possesses every healing virtue, which may be obtained from other remedies. If a country abounded with sour and bitter fountains, and only one of pure fresh water existed, it would then, from its scarcity, be most highly prized. As it abounds everywhere, and is to be had for nothing, its healing virtues are overlooked and despised; whilst, on the other hand, great faith is reposed in such things as are only to be obtained with much difficulty and expense, which are prepared with great and unnecessary trouble, and on which pompous, high-sounding titles are bestowed. The Roman poet, Lucanus, has taken a just view on this subject, and inculcates the virtues of sobriety and cold water in the following lines:—

‘Discite, quam parvo liceat producere vitam,
Et quantum natura petat. Non evigit ægros
Nobilis ignoto Liffasus Consule Bacchus;
Non auro myrrhaque bibunt; sed gurgite puro
Vita redit; satis est populis fluviusque Ceresque.’

Luc. Phars. iv. 377. 81.

“Dr. Hoffman states that the beneficial effects of different watering places in chronic disorders are not to be attributed to the light, sparkling air, or to the saline, or other mineral substances combined with the water, so much as to the medicinal properties of common water, with which they are mixed, and which is drunk in great quantities.

“Pure water, or water mixed with common salt, is recommended as

a vomit or as an aperient. It operates with greater effect than any other purgative, and is strongly recommended by the Neapolitan physician—the celebrated Ingrassias. He states that a physician relieved the viceroy of Sicily, Johannes de la Vega, by these means, and received from him as a reward the golden cup, valued at fifty ducats, out of which the water had been drunk.

“Perspiration caused by cold water is more salutary than that by any other means; and although warm water will produce perspiration, yet it chills the body afterwards much more than cold.*

“Immersion in cold water is not followed by any ill consequences: thus, a lady far advanced in pregnancy, whilst driving in a sledge, fell through the ice, and was completely drenched with water, yet she was afterwards safely delivered without any bad effects arising from the immersion. The Indians plunge their new-born children in cold water, and continue to bathe them daily. The Turks perform their daily ablutions with cold water; also the Russians, from out of a warm vapour bath jump into cold water or roll in the snow, by which means they become very hardy, capable of enduring frost, rain, heat, and the most inclement weather.

“*On the effects of washing the skin with cold water.*—The skin is not to be considered merely as a coat or covering, but is of great importance to the health of the body. As a coat or covering it protects the inward parts from many external injuries, and keeps them together as the best bandage that could be invented. It is also the organ by which the superfluous parts of the blood, as well as the superabundant watery particles, pass off by insensible perspiration. The want of moisture is injurious, it loses its pliable elasticity, becomes shrivelled, and causes pain when stretched. The neglect of cleanliness is productive of much evil inconvenience, the pores becoming closed, the viscid serum, fat and oily particles with which they are filled, obstruct the insensible perspiration to the great injury of the health of the body, giving rise to various diseases, both cutaneous and others. Cold water is better adapted for removing these impurities than warm, which latter dries up the skin and injures its fine vessels, whereas cold water strengthens it, renders the body hard and insensible to cold, like that Scythian, who went naked about the market-place at Athens, to the great wonder of the people. On being questioned by one of the philosophers, how he could go

* This fact is noticed by Sir J. Floyer, Baynard, and all the authors on the use of cold water.

about so naked in the cold? asked in reply, why the other did not cover his face up in winter? Upon the Athenian answering that it was accustomed to the cold, the Scythian rejoined, Then consider my whole body as being all face.

“ The frequent ablution of the body with cold water not only preserves it from various cutaneous affections, but will cure them. I recommended a woman, who had the itch, to get into a tub of water, and, remaining in it several days, to eat, drink, and sleep therein. This being attended with too much inconvenience, she washed herself several times during the day, and, *wrapped herself up in wet sheets during the night*, and then became cured in a short time. Some mix a little superstition with this treatment, thinking that the itch can only be cured by bathing on Good Friday. A man who suffered severely from this disorder, as also two women, went on a Good Friday to a rivulet and bathed in it in their shirts, then returned, without taking them off or drying them, went to bed, and were entirely cured. Henricus ab Heers relates a case of a young man whose hands were chapped and cracked cross-ways, and his skin covered with an eruption resembling Elephantiasis, together with a want of action in his liver. He was ordered to be laid on a straw bed and placed under a mill-stream, so that the water might fall from a considerable height upon the region of the liver. This was repeated twice a day, early in the morning, and an hour and a half before supper. By continuing this treatment several days, and taking cooling medicines, such as whey with prunella salt, he became perfectly cured.

“ The healing virtues of cold water can never be sufficiently praised in wounds or sores of old standing. A gentleman of my acquaintance had an ulcer on his foot, which he cured by frequently bathing in a pond; and, whenever it threatened to reopen, speedily re-established the cure by the same means. A fisherman had a large ulcerated abscess in his thigh, which had continued, in spite of every remedy, for the space of two years. The fear that water would aggravate the evil had caused him to abandon his pursuits, but the prospect of starvation compelled him again to renew them. He went into the water to fish, and coming out after two hours, was agreeably surprised to find the sore much less painful. This induced him to go daily into the river, and in a short time he became perfectly cured.

“ I have particularly observed that rapid streams and rivers are much more efficacious in healing bad sores than water in tubs; the more so when the patient wades against the stream, as then the water

enters and cleanses the ulcer more effectually. The stream of fresh water being constantly brought forcibly against it, separates and washes off the slough, together with the sharp, acrid, corroding matter. One of my colleagues had a patient with a swollen and ulcerated thigh, who derived but little benefit from bathing the part in a tub of cold water; he was, therefore, ordered to bathe it in a running stream. In a short time the ulcer became perfectly healed. The cure would be effected by bathing the diseased part in a tub, but would require a much longer time. I have ordered my patients to let their sores remain soaking in water for several days and nights, as tanners do their skins, to remove their putridity. Many cases of this kind may be met with in Dr. Schwertner's *Medicina Universalis*.

"I have also witnessed the good effects of water in St. Anthony's fire, which was removed in the course of a few days, without the slightest injury to the skin; whereas, on the other hand, the application of rose-pink and white lead in powder, or of fat, oily pomades, and plasters, impede the perspiration, increase the pain, and frequently cause ulcers. Spirituous lotions in some measure burn the skin, so that it peels off in large pieces; in like manner other applications only aggravate the disease, and render it more difficult and tedious to cure. In those cases where the application of water has not succeeded, it has possibly arisen from the patient applying it lukewarm, instead of cold.

"The frequent application of cold water is of the greatest advantage in cases of inflammation of the breast. It allays the heat, assuages the pain, and, if used at the commencement, causes the inflammation to subside. It either discusses an indurated tumour, or if supuration cannot be prevented, renders the skin soft and pliable, so that the maturated pus may form for itself an opening without the aid of the lancet. Even cancerous ulcers can bear the application of cold water very well; it refreshes and cleanses them, corrects the corrosion, and mitigates the pain. I have met with cases where the most bland, innocent, and advisable remedies having proved irritating and painful, the patients have not only obtained great relief, but eventually been cured by using cold water.

"In acute diseases the fire burns with the greatest violence in the interior of the body, but, as may be seen by the thermometer, the skin is also affected in a great degree. Where the fire burns, there we must quench. Cold water, though taken in large quantities,

does not relieve the burning skin. But, by washing the body with cold water, the patient feels immediately refreshed, and scarcely are the sponges applied, before instant relief is obtained. So voluptuous is the sensation, that many are unwilling this washing should be discontinued; but, like the rustics Latona changed into frogs, would prefer to remain in cold water.

“Infants who have eruptions between their legs, on their arms, and other parts of their bodies, like to be rubbed with cold water, and are, by this simple remedy, speedily cured.

“In exanthematous diseases, as small-pox, measles, scarlet-fever and other rashes, we may freely wash with cold water, from first to last, during the whole course of the disease, in order to prevent the fever from becoming too violent. The skin is thus rendered more soft, so that the acrid matter can easily pass through it. In small-pox, the corrosive quality of this acrid matter is rendered milder, so that it does not eat into the skin, leaving scars behind, and very few patients who have been treated this way have been marked by the disease. The Africans wash all their small-pox patients. A captain, having a cargo of slaves amongst whom this disease made its appearance, treated them after the European fashion, putting the patients between two mattresses, and otherwise heaping bed-clothes upon them, in order to bring out the disease. In great distress, they cried and begged to be allowed to treat themselves according to their own method; upon which the other slaves tied a rope around the bodies of the sick, and dipped them frequently during the day into the sea, drying them afterwards in the sun, and in this manner they were cured, and scarcely one died.”

Here the author quotes a variety of cases from Sir John Floyer and Dr. Baynard, to show the benefit of cold immersion in small-pox during every stage of the disease.

“It is,” he says, “equally beneficial in measles and other rashes; scarcely any one died of them; and in small-pox not one-fourth of the number die that usually perish under the hot regimen. Out of 156 small-pox patients, which a neighbouring physician had treated in this way, only eight died, although the disease raged at the time in a virulent manner. In 1737, during the prevalence of a malignant epidemic, accompanied with *petechiæ*, very few died who were submitted to this treatment, although they were washed until they became very cool, even during the continued and debilitating sweats.

“A noble lady, who during a violent fever not knowing what

to do with herself for heat, restless and tossing about, obtained immediate relief by dipping her hands into a basin of cold water. The blood, being cooled in the veins of the hands, was, in the course of circulation, sent into the interior of the body, and a fresh supply of heated blood continually rushing to the hands, and there cooled, by degrees refreshed the whole body.

“The Egyptians wash the heads of those suffering from headache, and order them to drink abundantly of the Nile water. A hunter, who suffered so much from a constant headache, that, raging with pain and weary of existence, he felt inclined to dash his head to pieces, was happily cured by having a stream of cold water directed upon it. The celebrated Englishman, Dr. Allen, states in his Synopsis, that *a handkerchief dipped in cold water, and bound round the head, to be renewed as often as it becomes warm, will cure the worst headache.*”

“A young man of fashion suffered severely from headache, in consequence of wearing his hair long, and thickly covered with powder and pomatum. On submitting to have his head shaved, and washing it every day with cold water, he obtained immediate relief. Septalius observes, that cold applications were of the greatest service in headaches. He was in the habit of prescribing a medicine termed Oxyrhodium, composed of vinegar and rose-water, in which linen bandages were dipped and applied to the forehead; and the same was also poured from a height upon the coronal suture, or crown of the head.

“The application of cold water to the head is of the greatest service in delirium, phrenzy, inflammation of the membranes of the brain, and madness.”

* This quotation is not exactly correct. Dr. Allen recommends fasting, and drinking a little cold water the first day. “If,” says he, “the pain continues, the next day, it will be advisable to take some purging medicine, and to make use of sternutatories, and still to refrain from eating or drinking anything, except water: by this means, in two or three days’ time, the pain usually goes off.” Art. 277. In Art. 284, he gives the following as a miscellaneous quotation: “There is a way of removing the most sharp pain in the head immediately, by a very easy remedy,—viz. by the application of a napkin, wetted in cold water, *round the neck*, and repeating it, as often as there is occasion, until the pain ceases, which it soon will, as if it was cured by an enchantment; and if it return again, it is curable by the same method. But after all,” he adds, “it is a dangerous experiment, which a regular physician would scarce adventure upon.” The method mentioned by Dr. Hahn is well known to be efficacious, and was frequently had recourse to by George IV.

Here the author relates the case of a servant-girl labouring under phrenzy, mentioned by Dr. Willis. *Vide* p. 118.

“During the violent fevers of the late raging epidemic, I have frequently observed that ice, tied up in a cloth and applied to the head in cases of phrenitis, produced a most visible salutary effect, and, in the course of a few hours, permanently restored the intellects. I have never known a patient die in consequence of this treatment; not that all will be saved who submit to it. Celsus observes, there is not anything of such use to the head as cold water; and recommends such as are subject to weakness of the head in summer, to plunge it into cold running water; also in cases of weakness of sight, accompanied with a purulent discharge from the eyes, and in enlargement of the glands. Floyer instances its effects on drunkards, who are relieved of their headaches, become sober, and evacuate a large quantity of urine as soon as they are plunged into cold water.

“Those who are obliged to run or walk any great distance, by which violent and long-continued motion the veins of the legs become swollen, and accompanied with great fatigue, will find their pains relieved, and feel themselves refreshed by taking a cool foot-bath. This is made mention of in the Old Testament; and it was considered an indispensable mark of attention to present the newly arrived guest with cold water to wash his feet. Floyer confirms this fact, and adds, that if one of two men about to run a race bathed his feet and thighs in cold water, the one who did so would, *cæteris paribus*, be certain to win. I have, in my own person, frequently experienced the good effects of this cold washing; it seems to draw, as it were, the sensation of fatigue out of the legs and thighs; heavy and weary as they feel, they soon become again light and active. An old woman, with whom I was acquainted, was, by these means, in her pilgrimages to the shrines of saints, able to out-walk her younger companions.

“The cold bath is of great efficacy in strengthening the organs of generation: thus, Nero was in the habit of plunging into the Tiber before visiting his mistress. It is an excellent remedy for fluor albus, and strongly recommended to prevent abortion, in which case the bath should be taken in the evening, after the digestion is completed. In some cases it is advantageous to let blood a few days before it is used.

“Father Bernardo, a Sicilian Capuchin monk, performed many surprising cures in the island of Malta, in the years 1724 and 1725. His practice was to order his patients to drink iced water, and some-

times to take the same as a 'lavement.' He kept them almost fasting from one to two months; and pursued this treatment in winter as well as in summer. He cured the Grand Prior Ferretti, aged ninety-two, when at the very point of death, giving him iced water to drink. It is stated that none of his patients perished, either from starvation or otherwise. Thus, by means of ice and cold water, he performed a great number of wonderful cures, in cases which had been given up by the physicians, so that he was called the 'Water Doctor,' many of which are related in a French treatise on 'Les Vertues Médicinales de l'Eau commune.' The use of ice is known to the Russians, who apply it in the small-pox; and a prince of Brunswick cured himself of a severe attack of rheumatism by applying ice to the affected part.

"In cases of cramp, contraction, and paralysis, in addition to washing the parts with cold water, it is advisable to wash the head, and particularly the back of the neck, as the place from near which the nerves in this disease derive their origin. Also to use the *Douche* bath, both to the head, covered with a *sponge-cap*, and to the parts diseased, either exposed or covered with a cloth. The action of the water is soon found to produce a warmth in the skin, and penetrating deeper than the cold-bath, (*i. e.* producing a more powerful reaction,) operates more quickly and effectually.

"A woman who had suffered a long time from pains in the back, neck, shoulders, and arms, obtaining no relief from the remedies employed, at last applied to me for advice. I ordered a stream of water to be poured over her naked body in a cool room, the weather being also tolerably cold; *I then had her wrapped up in sheets, dipped in cold water, and which from time to time were renewed.* She remained in them for two days and nights, fell into a moderate perspiration, and in a few days was perfectly cured.

"During the use of the cold bath we should carefully avoid stimulating food and warm clothing, as giving rise to tenderness and many disorders, but abstemiously observe a diet moderate and cooling; at the same time, freely exposing ourselves to cool fresh air, and *drinking abundantly of cold water.* If we act otherwise, no permanent benefit will be obtained from the cold bath, as the original disorder would soon return. Therefore, whoever bathes in cold water to cure a disorder, must also drink cold water to prevent its return.*

* These rules are taken from Floyer without acknowledgment, and are precisely those followed at Graefenberg.

“Bathing and washing are not only necessary for the sake of cleanliness to those in health, but also to avoid such disorders as arise from the accumulation of impurities on the skin. My late father, in his Psychrolusia, laid down the following rules to be observed in this respect:—On getting out of bed in the morning, the face and whole body should be washed with cold water, first with the naked hand, and afterwards with a sponge; pressing the water out of the sponge into the eyes and ears; then rubbing the body dry; rinsing out the mouth, and drawing the water through the nostrils; and finishing by taking a hip bath. The trouble thus taken will be amply repaid by an agreeable sensation of warmth and freshness. Sick patients cannot do this; but the attendant should wash them over with a sponge dipped in cold water; and *apply bandages (umschlage,) also dipped in cold water, especially to the diseased parts, suffering from heat, pain, swelling, eruptions, &c., not merely once a day, but oftener, as the greater or less degree of intensity of the disease may require.*

“A man, seventy-five years of age, was seized with a violent fever, and treated in the usual way, according to the hot regimen. A rash made its appearance, whilst his strength became gradually more and more exhausted. Lying constantly on his back, the skin over the sacrum became inflamed and ulcerated. The patient remained in this state for six weeks, when a hardness and swelling was observed about the knees; the lower extremities had become stiff, benumbed, and immoveable; the muscles were shrivelled up. The stimulating heating treatment was now abandoned; cooling emulsions, and water, mixed with the juice of lemons and raspberries, ordered to be drank. *Linen rags, dipped in cold water, were frequently applied to the inflamed and ulcerated parts over the sacrum. The same were also applied to the knees, notwithstanding the rash on the thighs and other parts of the body, and continually renewed night and day. After a few days, cold foot-baths were used, and moist napkins were applied to the feet.* This cooling treatment gave immediate relief. The feverish heat left him, and the rash disappeared. He recovered the use of his legs and thighs, and within three weeks was perfectly restored to health; and declared, that after this water treatment he enjoyed better health than he had done for the last thirty years.

“A girl, ten years of age, took the measles; the throat became sore; on the fifth day apthæ appeared on the tongue; the sub-

maxillary glands became enlarged and painful; the tongue thickly furred with a white border, on which the impression of the teeth was visible; from the face to the soles of her feet were numerous confluent red spots, accompanied with much itching. On the sixth day the measles raised themselves a little. *She was now constantly washed with cold water, and the same given her to drink.* On the seventh the throat was better, and the eruption became somewhat paler. The night of the eighth day was passed in much restlessness; the glands ulcerated on the inside. On the ninth the face began to desquamate; and on the following days the epidermis peeled off in such quantities, that I am in possession of a piece from her arm nine inches in length.

“A lady of rank, whose parents had suffered from rheumatic contractions of the joints, was also afflicted with the same disorder. Her elbows were much enlarged; by washing with cold water, and sometimes rubbing with snow, the disease was arrested, and the enlargements greatly diminished.”

Dr. Hahn states he has cured many cases of insanity by causing the patients to drink largely of cold water. “Such,” he says, “as would not drink I had chained up, and gave them salt herrings to eat; and by thus exciting thirst, they eagerly drank the water placed before them. One of them, who ate, for several days running, from eight to twelve herrings, and drank eight quarts of water, was cured in three weeks.”

EXTRACTS FROM SIR JOHN FLOYER AND DR. BAYNARD ON THE COLD BATH,
AND DRINKING COLD WATER.

Sir John Floyer practised at Lichfield, and was a physician of considerable eminence in his day. His treatise on Asthma and the Physician's Pulse-watch still enjoy considerable reputation. The Psychrolusia, or History of Cold Bathing, was first published in 1702, and went through many editions. It was translated into various languages; a large portion of Dr. Hahn's treatise was extracted from it, and a curious French work, “*Sur les Vertues Médicinales de l'Eau commune*,” was in part compiled from the same source. Sir John's friend, Dr. Baynard, very successfully adopted this practice, and their works have always been published together.

Sir John Floyer commences with remarks on the antiquities of

cold bathing in the cure of various disorders, and supposes its disuse in England may proceed from the change of religious opinions. "Anciently," he says, "most springs of remarkably pure or cold water were dedicated to some saint, and consequently the virtues of these holy wells were imputed to the saint." He notices that cold ablutions, as a religious ceremony, derived their origin from the salutary effects of cold water on the body. That baptism was formerly performed, down to Queen Elizabeth's time, by the total immersion of the whole body, which was repeated three times, and not by sprinkling or by pouring water on the head. Adults were also thus baptized by the primitive church, and entirely naked, even women (by deaconesses) as well as men. It was thus St. John baptized Jesus Christ, who was dipped three times in the river Jordan. The ancient Scythians, Egyptians, Greeks, and Romans, made frequent use of the cold bath. Hippocrates, Celsus, Cælius Aurelianus, Ætius, Paulus Ægineta, and many other ancient physicians, bear testimony to its efficacy in various diseases. The ancient German and Celtic nations, the Tartars, Highlanders, Welsh, Irish, Indians, and many others, were and are in the practice of washing and bathing children with cold water. Its utility in preventing and curing the rickets is well known, so that it is a common saying amongst nurses, "that no child has the rickets unless he has a dirty slut for his nurse."

The Greeks and Romans dedicated their springs and rivers; the ancient Greeks had their sacred fountains. The efficacy of cold bathing was well known from the most remote periods in the history of nations, and was had recourse to, *combined with sweating*, for the cure of almost every disease, especially cutaneous diseases and contractions of the limbs. He then mentions the pool of Bethesda, and relates an anecdote from Bishop Hall's "Mystery of Godliness."—A cripple, who for sixteen years moved on his hands, the sinews of his legs being contracted, had a monition in his dream, to wash in a well at St. Maderne's in Cornwall, by which he was suddenly restored to his limbs. The bishop took a particular account of this story, and had it sufficiently attested by the neighbours.

There is scarcely any cold spring famous for any cures, but it is also commended for scabs and leprosy, which, he observes, must be grounded on the experience of those times in which the leprosy was cured by cold bathing. Mentioning St. Unite's Well, near Lichfield, he says, "I found these baths very beneficial for all rheumatic pains, paralytic weaknesses, and stiffness after rheumatism, and cured a

countryman of a weakness in both his arms by twice bathing, after he had tried all usual methods for two or three months in vain. Though it relieves the weakness and stiffness of the limbs, yet in cases of gout no great good can be expected *without drinking water*, taking a cool saline aperient, and observing a temperate diet." He then gives the following cautions:—

"1. To bleed and purge, and use such proper diet and medicines, both before and after bathing, as are suitable to the disease and the constitution of the patient.

"2. Not to bathe when hot and sweating; not to stay in the bath above two or three minutes, or as the patient can easily bear it; and to go in and out immediately, on the first bathing, after an immersion of the whole body.

"3. To use the cold bath before dinner, fasting, or else in the afternoon, towards four or five o'clock; it is dangerous to go in after great eating or drinking.

"4. Continue to bathe nine or ten times, and at least two or three times a week.

"5. To use sweating with cold bathing, in palsies and rickets, and several diseases affecting the nerves with obstructions.

"6. In windiness or sizyness of the humours, or their flatulency, no sweating is necessary, nor when bathing is used for preservation of health, or the invigorating of the animal spirits.

"The use of common cold water is well known to farriers, who have a method of curing foundered horses by it thus:—Take a foundered horse within forty-four hours after his being foundered, ride him till he foam and sweat much, then ride him into the water to the saddle skirts, keep him there for an hour, then gallop him to the stable, tie him to the rack, and let him not eat for four hours, dress him, litter him, and put blankets on him to sweat, and cool him by degrees.

"I have also been informed, that the way of sweating by cold water, is thus practised to diminish the weight of a horse-jockey. Dip the rider's shirt in cold water, and after it is put on very wet, lap the person in warm blankets to sweat him violently, and he will lose a considerable weight—a pound or two.

"To put the feet into cold water stops uterine hæmorrhagy, and to use cold water in the hip-bath cures the hæmorrhoids; washing the feet in cold water prevents corns."*

* It is well known to the fly-fishers in the north of England, that wading in the rivers is a certain cure for corns.

The advice upon regimen closely resembles that observed at Graefenberg, viz. to abstain from excess of animal food, to feed much on fruits, and to drink water; not to use hot things, high sauces, brandy, spirits, fermented liquors, salt meat, spices, tea, coffee, and chocolate. Not to wear warm clothing. "Flannels," he says, "renders the person very tender, and subject to the changes of weather, and too much perspiration." Not to sit much by the fire, but to take exercise in the open air, riding or walking, and that down beds are very injurious.

"Cold baths are the chief and most effectual means in the cold regimen; nothing preserves the body so well from the injuries of the weather as cold bathing, which makes the skin more tense and contracted, and consequently more insensible to the changes of the air, its cold and moisture. I have known many endure the cold of the winter after the use of cold baths, who always found their bodies more tender after the use of hot baths all the winter following; and the truth of this will appear by the cures I shall relate of two tender persons.

"The usefulness of cold baths was discovered by the inhabitants of cold countries, who generally fortify themselves against the cold air by the immersion of their bodies into cold water; and, to prevent the mortification of their limbs, rub the frozen parts with snow. Cold baths will produce great sweats. When any diseased humours are in any part stopped in their circulation, or mixed with the blood, it seems the most rational method to sweat at the first use of cold baths; but where there is no evacuation of humours necessary, sweating is not proper after cold bathing, but only gentle exercise or friction. It is further to be remarked that most of our ailments proceed from an excessive hot regimen or a very hot diet in a cold climate, as strong wines, brandy, high sauces, &c., and also by using ourselves over tenderly in clothes, warm beds, hot rooms, &c. We must remove the external causes of our tenderness, and use a cool temperate diet, cool liquors, cool air about us, as well as cold baths: for no perfect cure can be expected from cold baths, unless we avoid the occasions of our diseases; for if we continue any excess in our hot regimen, that will again renew those diseases the cold bath has cured. And I generally make this observation, that where cold bathings are necessary, for the cure of a disease, then drinking of cold water is also necessary to prevent a relapse into the same."

The following are the two cases above alluded to, and, with many others, quoted by Dr. Hahn. Mrs. Bates, of Ashby-de-la-Zouche, in

Leicestershire, being above fifty years old, was esteemed by her neighbours consumptive, because she coughed much, and suffered from bad rheumatic pains near twenty years; had the sciatica, with a weakness and numbness in her knee, so that she was lame, and had little use of her legs. She sat constantly by the fire covered with much clothing, and was so tender, that she was afraid to venture into the open air. She complained of a pain in her back, which she imagined to be the stone, and had much pain in her breast, which she thought cancerous. In the summer of 1699, she went to Willow-bridge cold bath, in Staffordshire, which is a very cold water, and feels smooth and oily, where she bathed constantly once a-day, and drank many glasses of the same water every day. She continued this method of treatment for a month. The sore breast pained her very much the first time she went into the water, being up to the neck, but never afterwards. Upon the second time of going into the bath the pain in the hip fell into the foot. By continuing the bath she became perfectly cured, and the pains have never since returned. She now walks well, eats well, wears fewer clothes, is cured of the pain in her back, and the swelling in her breast, which was perhaps a milk tumour, and had continued there many years. Yet she continues drinking the water ever since.

“Mrs. Watts of Leicester went to the cold bath at London about Michaelmas in 1699. She was troubled with continual vomiting, wandering pains in her limbs and head, convulsive motions or twitchings of the muscles, violent hysterical fits, colic, flatulency, continual sweatings, loss of appetite, an emaciated state of the body, extreme tenderness, sensible of the slightest change in the weather, accompanied with chilliness, vapours, faintness, and pains, especially in the teeth. Tonics, as bark and iron, emetics and opiates, were tried in vain, neither did she derive any benefit from the use of the Bath waters and warm bathing. Under the advice of Dr. Baynard, she had recourse to the cold bath, and used two-and-twenty baths within the space of a month, dipping herself under water six or seven times every morning, without staying in the water any longer than the time of immersion, and went warm from her bed to the water. By this bathing the skin contracted, and she was never very tender since, nor subject to colds as before. She recovered her strength and appetite, and became more plump. The sweatings, flatulency, pains and convulsions ceased. Both during and after the use of the cold baths she consumed many hundreds of lemons, either

sucking the juice or squeezing it into water; she also found great benefit by the use of cream of tartar, half an ounce or one ounce in water gruel for the hysterical vomiting."

Extract from the Letter of Dr. Ellison of Newcastle.

"Nothing is more common in this country, and proves more generally successful for the preventing and curing of rickets, than to send children of a year old and upwards to St. Bede's, Honwick, or St. Mungo's wells (which are extremely cold springs), and in the months of June and July, to dip them in the evening for a fortnight or longer, intermitting a day or two, or more, in the whole, if the child be very weak.

"Some dip them twice or thrice over head and ears with their shifts and night-caps on, giving them a little time to breathe between each immersion. Others dip them no farther than the neck, (because the water is apt to stop their breath,) and dip their night-caps thoroughly, and put them wet on their heads. Others content themselves to put the children into a tub of water, gathered from the spring, and dash the water upon them over head and ears. All which immersions are to be despatched as quickly as may be, that so the child may not continue in the water any longer than is necessary, that is, till his body, shift, and night-cap be thoroughly wet.

"As soon as the children are dipped, they, with their wet clothes on, are wrapped up in warm blankets over their head and whole body, and put immediately to bed, which instantly puts them into a violent sweat. In this condition they lie all night, till towards morning the clothes are taken off by degrees, that so they may cool gradually, and in the morning they have dry shirts and head-clothes put on. The children are not debarred their usual diet or play; only care must be taken to keep their necks warm, to secure them from catching cold. I never heard that any children, who had only the rickets, died of dipping, and few or none but found great benefit by it.

"People of all ages resort to these two wells for various complaints. Adults remain in a quarter or near half an hour, their backs or diseased parts being well rubbed during the time. They use no preparative physic, nor observe any diet before nor afterwards, but a draught of warm ale or sack, to comfort them after they come out. The sick go to bed immediately afterwards, and sweat for two hours

or more. But the healthy, who go in for pleasure, put on their clothes and walk about. Immediately on coming out they find a great warmth all over, and feel more nimble and their joints more pliant. It is usual to bathe every day, or twice a day, for a fortnight or a month, according as their complaint may require more or less bathing.

“ ‘My boy,’ writes a lady of quality, ‘was at the cold bath about three weeks, and was dipped twenty-eight times, that is, first nine times, and then rested some days; and he was often dipped twice in a day, morning and afternoon, and, after each time, he was put to bed, and sweat but very moderately (being a weak child), but others, who are stronger, sweat more, and, after the rest mentioned, they dip him three times more, and so a third time. The way of dipping was thus: a woman plunges the child over head and ears, and then sets them on their feet in the water, and rubs them all over, especially their limbs, back, and belly; they plunge and rub them thrice, and that is called one dipping; they must not be above three minutes in doing this. If the children do not sweat, they put their maids to bed to them. The children purge as long as they use the cold bathing, but that ceases as soon as they leave it off.’ ” By this letter, says Sir John, we may observe that a long use of bathing is necessary for curing the rickets, which was the child’s disease.

The following is an interesting case:—“Mrs. Piser, of Repton, in Derbyshire, was severely afflicted by rheumatism, which had lasted four years. The joints of her elbows, wrists, knees, and ancles were very much enlarged and knotted, and so tender that she could not suffer any motion in them. The fingers were closely contracted, so that she could not move them, nor any other of her limbs. Her hands and arms were strangely distorted by the contraction of the sinews. Her body was much emaciated, and she had a short cough. I began by letting blood and purging once, for her strength could not bear any more. This was done by way of preparation for the bathing afterwards. She was dipped in a chair three times at each bathing, and she bathed nine times in the whole. The wet cold weather caused us to leave it off, though she found a great refreshment always after it. She was put to bed after bathing, and sweat plentifully, by the help of warm ale and spirits of hartshorn. Once or twice she did not sweat, and found herself not so well relieved as by sweating. By this treatment her pains and swellings presently remitted, and after a while went quite away. She began to use her arms and feet, which she had not done for three quarters of a year

before. She improved in appetite, increased in flesh, and the dry cough abated. As soon as I found the pains abated, I prescribed some steel and antiscorbutics, and ointments for the contracted sinews, by which she received some benefit, and continues very well in all parts but one leg, where the sinews under her knee are not yet come to the full length."

"Sweating is necessary in bathing for rheumatism, and it must be well observed as a particular circumstance, that where we design sweating, we must not keep the patients long in the water, but only dip them thrice, and immediately take them out again, that the natural heat may quickly return, and raise a sweat to discuss tumours and pains. I have also observed that evacuations and alteratives, and ointments are necessary, as indicated by the disease, besides the bathing; therefore, I believe, cold bathing can never be made a quack medicine, to be prescribed alone, nor to be used for all diseases, but, according to physical indications, in company with other medicines, and then they will perform very great cures."

Extracts from Dr. Baynard concerning cold immersions, &c.

In speaking of some most remarkable cures done by cold water, and which had fallen under his own eye and observation, he thus assures the reader of his veracity. "I always (I thank God) looked upon it as most impious, and one of the worst of wickednesses (in serious things) to impose upon the living, but much more to *banter*, and hand down a falsehood to posterity. A fault (I doubt) too many of our physic observators have been guilty of."

He then quotes ancient and modern authorities on the medicinal virtues of cold water, and afterwards gives a great many cases proving the efficacy of cold bathing in a variety of diseases.

"Samuel Crew suffered from rheumatic pains all over his body, in the muscles as well as in the joints, contraction and hardness of the calf of the leg, and of the abdominal muscles; was reduced to a skeleton, so that he became raw and galled with lying on his back, and was unable, for half a year, to move hand or foot. Shooting pains in his ears, as if a red hot iron had been run into them, so that the pain was distracting. Obstinate constipation, a motion only once in four or five days by purgatives. Consulted several physicians, who prescribed purging, bleeding much, and very often, and perspiring a whole month together. Took viper powders, pearl cordials, sal volatile, spirits of hartshorn, wood drinks, &c. (or,

stomachic powders, the compound powder of prepared chalk, liquor ammonia, and the compound decoction of sarsaparilla). The warm bath at Bath greatly increased the pains. Dr. Baynard recommended him to plunge into a cold bath, over head and ears, every morning fasting ; to use ground pine, germander, a little white horehound, acidulated with crab-verjuice, for ordinary drink. In six days' bathing and using the drink he was able to walk, the pains insensibly vanished, the appetite returned, he slept sound, and recovered his strength, flesh, and colour.

" A countryman at Harrow-on-the-Hill, suffering from severe arthritic (rheumatic ?) and spasmodic pains for nearly six months, lost the use of his lower extremities, so that he was unable to stand. He tried various remedies in vain, and had been salivated with mercury. He was entirely liberated from his complaints and restored to perfect health by taking a single cold bath, but he took two or three more in order to prevent a relapse.

" A learned gentleman, a doctor of laws (says Dr. Baynard), told me that, being light headed in a fever, and most intensely hot and thirsty, he got from his nurse, and rushed into a horsepond in the yard, and there stayed above half an hour. It brought him presently to his senses, and allayed both his heat and thirst. After which, when in bed, he fell into a sound sleep, and when he awaked (in a great sweat), he found he was well ; but complained of a severe pain in his head for some time after, which he himself thinks proceeded from not wetting his head.

" The servant of Sir Thomas Yarborough, during the delirium of the small-pox, got from his bed and plunged into a piece of water, but was presently got out. The small-pox seemed to be sunk and struck in, but upon his going to bed they came out very kindly, and he safely recovered." Dr. B. then relates another similar case, where the patient remained a considerable time in the water, and afterwards sat in his wet shirt. On putting on a dry one and going to bed, he complained of feeling faint, then drank a good draught of some cordial, went to sleep, awaked very well, and in a little time recovered.

" Dr. Dover of Bristol relates that a waiter at Oxford, during the small-pox, went into a great tub of water, and sat there at least two hours, yet recovered and did well.

" At a school in Dorsetshire, thirty or more boys, one after another, fell sick of the small-pox. The nurse gave them nothing but milk and apples during the whole course, and they all recovered. One

boy, by command of his parents, followed another treatment, and had nearly died.

“ During the great plague in 1665, a brewer’s servant at Horsley-down, in Southwark, was seized with it, and in his delirium ran into a horsepond, first drank his fill, and then fell fast asleep, with his head upon the pond’s brink, where he was found in the morning. How long he had been in the pond nobody knew, but he recovered to a miracle.

“ It was observed that such as dwelt in water-mills, and kept home also, watermen, bargemen, &c., that were employed on the river, were not at all, or rarely, infected with the plague. It is said, there were but two persons died on the bridge in the whole time of the visitation.”

“ Sir Henry Coningsby, when a young man, suffered severely from the gout. He is now in his 88th year, and continues to take away sixteen or eighteen ounces of blood once every three months. He drinks nothing but spring water, and now and then a little brandy. Formerly his fingers and toes were full of chalk stones, which had become entirely dissolved and dissipated, and the joints were reduced to their natural size by the use of the cold bath, which the old knight was positive would infallibly cure the gout in every person.”

In a letter from Sir Henry, giving an account of his own case, he states, that when about thirty years old, all his lower parts were seized with a numbness. He applied to Sir Theodore Mayerne, Dr. Winston, Dr. Prujean, and other eminent physicians, who agreed it was a case of palsy. They abstained from letting blood, which seemed rather to fix the distemper, prescribed sudorifics, and various other medicines; but all sense of outward feeling and heat was lost, so that nettles would not sting him, or clothes make him warm. He continued some years under this treatment, still for the worse. Tired in body, mind, and purse, he at last resolved upon trying a contrary mode of cure; was therefore bled once a month, used all the cold means; went into a cold spring-water bath at all times of the year, but commenced in the summer. The first time he went into the cold bath it blotched him in one place (that is, brought out an eruption), and so every day more and more by pimples rising, and then dying away. It gently excoriated the cuticle, opened the pores, and restored the natural heat. He ever afterwards, for forty years, continued his own doctor.

Here follow two cases of chronic catarrh cured by cold bathing. One, by accident, the man fell into the water, which was covered with

ice, up to his neck. He went home, got a warm shirt, took some broth, or other warm liquor, slept soundly, and the next day found himself nearly free from his cough. Then four or five of rheumatism. "Samuel Greenhill, a substantial yeoman, was seized with rheumatism in every joint, which had become swollen, and as big as if blown up by a bladder, and continued so for at least six weeks. He was wrapped up in flannel, and unable to move without assistance. He was, therefore, put into a chair, and thus let down into the bath, and before three minutes were over, was brought up again. He was able immediately afterwards to walk up stairs, and in an hour's time walked back to his lodgings. In less than a fortnight his joints were reduced to their usual size; he fully recovered his health, and continued to follow his occupation. (This is certainly a most surprising case of the almost instantaneous cure of acute rheumatism by cold bathing.)

Dr. B. observes that those who use cold baths are not so dry or thirsty as other people, and although very thirsty when they get into them, yet in a little time the thirst will disappear or abate. He then relates an anecdote of a countryman, who, during a discussion, as to the best means of getting an appetite, declared he had tried all the ways proposed; "but nothing," said the man, "is like going a-fishing, up to the chin in water for an hour or two; that will get you a stomach, I'll warrant you, nor am I dry."

"No men live so long and are so healthy, as the washers and dabblers in cold water. An old fisherman said, that little sleep, a cool diet, and thin clothes, were the only means to live healthy and long, and that the *water-air* made him eat heartily. He has known many old watermen and fishermen full or near a hundred; and it is told, that at Witney, in Oxfordshire, those who work at the blanket-mills carrying wet blankets in their arms, next their breasts, winter and summer, not only never catch cold, but live to an extreme old age.

"Cold water concentrates the spirits, strengthens the nerves, and braces up the muscular fibres, so that the body becomes capable of greater exertion, as may be proved by running and leaping before and after a bath. It is also a powerful aphrodisiac, *spicula veneris acuit frigus*. One well versed in these matters used to declare, that the temple of Venus was a pond of water; for she, that was born at sea, was out of her element on dry land. This is corroborated by several of our winter bathers, who have complained that all the injury they have found from cold bathing, even in frost and snow,

was that it did famem ac venerem nimis augere. There can be no doubt the following case, related by Henricus ab Heers, would have been cured by the cold bath:—

“Illustris quidam Anglus spadam venit ante annos quindecim impotentiae remedium quærens. Quando fœminam hic vir enervatus voluit amplectare, ad primum labiorum contactum semen emittebat, sed imbelle et prorsus aqueum et sero simillimum; uxorem duxerat annos natam sedecim, sed quam toto biennio, etiam se fatente, non devirginaverat; optimè erat habitus, corpore procero, eusarcos, genis rubentissimis.

“The cold bath is also one of the best remedies in the world to prevent miscarriage, and strengthen the uterine system, especially if taken towards bed-time. In some cases it may be advisable to lose a little blood a day or two before.

“It is useful in cutaneous diseases. A young woman who had suffered from the itch for some years, was perfectly cured by the cold bath. The itch, that seemed almost leprous, with matured boils on the whole body, especially on the hands, which swelled the fingers to such a degree, together with the soreness of the chaps in the folding of the hands, I have known cured in four or five immersions, so that the bladders that seemed matured and full of pus, have shrunk and subsided, and peeled off without any physic, but only moderating the diet, forbearing strong drink, and using exercise.”

Mr. Penn's Letter to Dr. Baynard.

“As I find the Indians upon the continent more incident to fevers than any other distempers, so they rarely fail to cure themselves by great sweating, and immediately plunging themselves into cold water, which, they say, is the only way not to catch cold.

“I once saw an instance of it with divers more in company. For, being upon a discovery of the back part of the country, I called upon an Indian of note, whose name was Tenoughan, the captain-general of the clans of Indians of those parts. I found him ill of a fever, his head and limbs much affected with pain, and at the same time his wife preparing a bagnio for him. The bagnio resembled a large oven, into which he crept, by a door on the one side, while she put several red-hot stones in at a small door on the other side thereof, and then fastened the doors as closely from the air as she could. Now while he was sweating in this bagnio, his wife (for they

disdain no service) was, with an axe, cutting her husband a passage into the river (being the winter 1683, the great frost, and the ice very thick) in order to the immersing himself, after he should come out of the bath. In less than half an hour he was in so great a sweat, that when he came out he was as wet as if he had come out of a river, and the reek or steam of his body so thick, that it was hard to discern any body's face that stood near him. In this condition, stark naked (his breech-cloth only excepted) he ran to the river, which was about twenty paces, and ducked himself twice or thrice therein, and so returned (passing only through his bagnio to mitigate the immediate stroke of the cold) to his own house, perhaps twenty paces further, and, wrapping himself in his woollen mantle, lay down at his length near a long (but gentle) fire in the middle of his wigwam, or house, turning himself several times, till he was dry, and then he rose and fell to getting us our dinner, seeming to be as easy and well in health as at any other time.

“ This tradition was in great measure, however, the loss of one of the bravest of the nations of Indians (remembered by Captain Smith, in his History of the Settlement of Virginia) called the Sasquenahs. For having, after the coming of the Europeans among them, learned to drink strong liquors, and eat freely of swine's flesh (mostly without salt) it brought the small-pox among them; they took the same method to cure themselves of it, when they were come out, which struck to their heart, and proved more mortal than the plague, few escaping the disease, by reason of that improper practice; though one would think that before they came out it might have moderated their venom and impression.

“ I am well assured that they wash their young infants in cold streams as soon as born, in all seasons of the year. W. P.” *

Dr. B. considers the best water for drink is such as will lather easily with soap, and is light, clear, and smooth to the taste, such as generally are marl or chalk waters. Of this sort of water, horses, cows, and other cattle prefer to drink, and rather choose to drink pond, ditch, or turbid puddle water, than the clearest springs from clay or gravel, there being in such waters some harsh and disagreeable particles, either to their palates or digestions. After other remarks, he concludes that well-water is the worst.

* This letter is valuable, not merely on account of the information it contains but as proceeding from the celebrated founder of Pennsylvania.

Baglini states, that "as wines, luxury, indolence and repletion, are the parents of the gout and the gravel, so can they only be cured by exercise and sobriety, by drinking water and a milk diet."

Dr. B. gives an account of several other remarkable cures performed by the cold bath, in cases he and Dr. Cole, the friend and correspondent of Sydenham, were called in to visit: rheumatic contractions of the limbs, paralysis of the cervical muscles, from distortion of the vertebræ, and a severe case of colic.

The case of Mrs. Heathcot.—This lady was newly arrived from Jamaica. She was so very weak, and her case seemed so deplorable and complicated with fits, partly hysterical, partly epileptic, was of such a spare habit, so extremely thin, that he entertained little, very little hope of her recovery. She first tried the Bath waters, in the Queen's bath, but found herself much worse; then removed, by small journeys, to London, consulted the president of the College and other physicians without deriving any benefit. Dr. B. and Dr. Cole proposed the artificial tepid bath, but equally in vain. It was then determined, as a desperate resource, to try the cold bath. "A shocking proposal," says Dr. B., "to so tender and weak a woman, but lately come from the torrid zone." He adds, "she readily consented to the experiment, and tried it, with a resolution and a courage not usual in her sex, and by her perseverance and a blessing attending the means, she is recovered beyond all expectation. She had two most severe convulsions, at, or presently after, her first going into the cold bath. Yet no ways daunted, she proceeded, though many times with jerks and twitches of the muscles, but which at last vanished and went off." In this case one thing is very remarkable: finding herself not well, with pain in her head, back, &c. and not knowing the cause, she continued her bathing as usual, but it proved the small-pox forming upon her; yet she escaped, and came through it very well, and little or no impression left on her face where they had been. The last time I saw this lady, she told me she had been in the cold bath more than one hundred and fifty times."*

The next case is that of Mrs. Margaret Bray, who, after being perfectly cured by the cold bath, and having laid aside her crutches, had one day been riding hard in the heat of the weather, which was then excessively hot, and overheated by violent exercise, went unadvisedly

* This case is valuable, as showing that the application of cold water to the surface during the eruptive fever of the exanthemata is beneficial.

with the heat upon her, into the cold bath, which threw her into a cholic, and the poor young lady died.

A smith had a cancer (ulcer?) on his right side, that had eaten the flesh to the ribs, and as broad as the largest man's hand, was perfectly cured by bathing in a mineral water, and *keeping a cloth wet in the same water always to it*. Dr. B. then quotes another case of cancer cured by drinking and washing in a cold spring, and adds, "they were wonderful cures, if true cancers," which he very much doubts, "as the most eminent surgeons affirm that they never knew a true and confirmed cancer to be cured."

"My old friend, Mr. E. Rigby, M. P. for Preston, has a very cold well, dedicated to St. Anne, where a great many cures are performed both by washing and drinking." He sent him a great many cases too long to insert: the principal were all sorts of sores, also sore eyes, worms in children and grown-up people, swelled legs, rickets, wandering pains, or rheumatism, &c. It was resorted to with success by a great many people.

He mentions the cold baths at Batheaston, near Bath, and states, that cold baths do the greatest cures to people who have been in the hot baths first: and that he has known many cases which neither hot nor cold baths have touched singly; yet joined, that is, successively used, they have performed the cure. It is to be remembered Dr. Baynard practised at Bath, and had ample opportunities of judging their relative effects. The following is important:—"Some of the best cures done by the cold bath is from a sudden plunge over head, and then immediately to go out. This should be repeated two or three times during the day, especially twice in the morning, an hour or two between each immersion, when the stomach is empty; but staying long in weakens the force of the nerves, and the benefit of the immersion is lost. Thus a bow, drawn smoothly to the arrow's point, and that moment let fly, the arrow soars aloft, and answers the intention of the shooter; but if it be drawn to the head, and there held five or six minutes, the fibres of the bow being weakened by so long a tension, it hardly has strength to eject it from the station of the archer." He then gives some cases where the patients remaining in too long, became so chilled, that the re-action did not take place, and suffered much injury in consequence.

"Those who drink water and use a spare diet not only enjoy better health than others, but usually bring sound and healthful children into the world, and are not easily angered or disturbed by the turbu-

lent passions of the mind. On the other hand, the proud, haughty, froward, ill-natured, that vex and fret at every trifle, together with their high savoury sauces, wine and strong drink at every meal, supping in the morning and dining at supper time, bring into the world a brood of miserable, small, king's-evilly, scabby, rickety infants.*

"Rickets was formerly a rare disease, but in the time of Charles I. it became almost epidemical, few families escaping it, especially those that were rich and opulent, and put their children out to nurse; when, through unnatural usage, and vicious disagreeable milk, the infant was soon spoiled by contracting from the drunken nurse *cacochymious*, or depraved juices. Hence, with the growing infant grew up the boot fashion for the men, and long coats for the women; for they were so ashamed of their crooked legs that they wore boots to hide them. This beginning at court, all must follow the fashion and wear boots too, with great boot hose, tops of fine linen, laced, &c. and jingling spurs. Hence the Spanish ambassador, on his return home, being asked by his king if London were a populous city, answered it *was*. 'Was,' rejoined the king, 'why is it not so now?' 'No,' quoth the ambassador, 'I believe they are gone ere this, for they were all booted and spurred before I came out of town.'" Here follows a humorous description of a fine-bred London lady of his times, of the careless nurse, and of the poor infant, half suffocated with tight bandages. He then points out the deformities this unnatural custom gave rise to, and contrasts such children with those of the Scotch Highlanders and native Irish, who are never swathed or rolled. Hence crooked backs and bag wigs. With these, and several other similar remarks, he concludes, "It is a great shame that greater care is not taken in so weighty an affair as is the *birth* and *breeding* of that noble creature—MAN."†

Dr. B. relates many cases of suppression of urine, caused by its too long retention, cured by cold water. "A gentleman, who had attended a long trial, found he could not make water, the fibres of the bladder being so much and so long extended, they could not contract. He

* To this the author might with truth have added, that they are invariably more or less subject to nervous complaints, and frequently become either idiotic or insane.

† No nation understands so well as the English the *birth* and *breeding* of other animals. How much care, labour, and expense is bestowed on improving the breed of cattle, yet none is bestowed on improving that of the human species! Money is the root of this as well as of every other evil.

lay all night in extreme pain, and next morning took several diuretic medicines, as the spirits of sweet nitre in white wine, and others, but to no purpose. Hearing of this by chance, I bid his friend strip him *naked*, and wrap him round the waist and abdomen with a *wet towel*, which, as soon as done, he made water immediately." He then gives a variety of cases of old and inveterate head-aches, rheumatism, gout, paralysis, St. Vitus's dance, chorea, and other diseases, cured by cold water. "It is," he says, "endless to recite the great cures which have been done on people of all ages and sexes, where the cause has been discovered to proceed from obstructions of the nerves, by means of cold bathing, when performed with care and caution."

In the Appendix he gives the following case :—"Mr. Thos. Hanbury, aged twenty-two,—feverish to an intense degree; violent parching heat; unquenchable thirst; quick and high pulse; scanty, high-coloured urine; mouth as it were scorched; two chaps or fissures the whole length of the tongue; the muscle of the thumb quite consumed, so that the palm of the hand was all plain; no cough, but a confirmed hectic; and was reduced to a skeleton; the skin seemed to hang upon him, was withered, dried, and ill-coloured. In the spring he had been seized with an intermitting fever, which changed its type two or three times, and terminated in a synochus or confirmed fever. This was in the month of July. By means of baths, and living almost entirely on buttermilk, he completely recovered by the end of August."

On this case, Dr. B. indulges in the following humorous remarks :—"Had this poor gentleman fallen into some hands, how had his soul, long since, been *bombed* out with boluses! How many *hods* of dispensary hodge-podge had been carried in! How many *repetaturs*, and *repetanturs*! How many *singulis*, *secunda*, *tertia*, *et quarta quaque horas*, had he been pelted into the grave with! And, lastly, like a horse, perhaps buried without his *hide*, and encased in a sheet of *blistering plasters* for his *shroud*."

He greatly commends buttermilk as an article of diet, and relates some cases of hectic fever, gout, and rheumatism cured by its sole use. In the north of England, a diet of churned milk, that is, buttermilk, and potatoes is considered a specific for the gout.

Mr. William Penn, the governor of Pennsylvania, with whom he had been very well and long acquainted, assured him, that his servant (who being present, confirmed the account) cured himself of rheumatism in the following way:—He had been long vexed with wandering pains, especially when warm in his bed, and also had some aguish

accessions. When the pain was most severe he got out of bed, threw off his shirt, and then plunged into a large tub of cold water ; he got out soon, and, though a very cold night, ran naked once or twice round the garden, and then plunged suddenly into the water again ; so out, and round the garden once or twice more, then taking a good *swig* of brandy, went to his bed. This threw him into a most violent sweat, which continued until eight or nine in the morning. From that time he was not only freed from his rheumatic pains, but also recovered his hearing, which had been previously obtuse or *hard*.

VANDER HEYDEN.

Arthritifugum Magnum.

A physical discourse on the wonderful virtues of cold water in the cure of gout, and a variety of other diseases, together with strains, bruises, swellings, and green wounds, by Herman Vander Heyden, an eminent physician of Ghent.

This interesting and valuable little tract was first published in 1649.

Vander Heyden appears to have been the first medical man who applied the use of cold water to a variety of diseases, and reduced its application to a system ; he has also the merit of having discovered the efficacy of cold evaporating bandages in the cure of recent wounds, and to him modern surgery is indebted for this most valuable invention.

He commences his treatise by observing, that he may be thought a very rough physician, if not a quack, for prescribing such a remedy to his patients as cold water : but there is not in nature a greater preservative from the gout, nor is anything more efficacious in assuaging its torturing pains during the paroxysm, especially if, at the same time, some blood is taken away as nearly as possible from the seat of the disease. With this view he orders a vein to be opened in the great toe, and also in other parts very near to the one affected. These topical bleedings are of much greater advantage than taking blood generally from the system, except in cases where the plethora or full habit of body may require it.

Cold water should be drank an hour or two before bed-time, and repeated in the morning ; also, whenever the patient is in pain. He trusts it will not be thought incredible that very aged persons have

been cured of the *sciatica*, or hip gout, perfectly, and for ever, in the space of four or five days, without any other remedy than cold water and letting blood. In case any vein should appear either upon or about the hip or shoulder, it would be proper to open it; but where none appears, cupping glasses, with more than ordinary scarifications, or, instead of them, leeches, may be applied with great success. The leeches or glasses ought to be put upon those parts where the pain is most acute.

In the *sciatica* the vein in the ancle, or, when the shoulder is affected, the vein in the arm, as the *vena cephalica* or *mediana*, may be opened with advantage. But cupping or scarifications on the part are of the greatest service. He has known where, on abstracting twelve ounces of blood, or a little more, from the part affected, a most severe and intense pain has immediately disappeared.

He then advises the use of purgatives to be followed by sudorifics, or the decoctions of *sassafras*, or *guaiacum*. A bladder half full of the warm decoction of sage, hyssop, thyme, rosemary, or the like herbs, may be applied to the parts. In cases of long standing, a large blister has sometimes proved an effectual remedy, and sometimes recourse, he says, has been had to the red-hot iron or actual cautery.

“Cold water is also of great service in *dyspepsia*, taken immediately after dinner. A raw apple, which is sharp and sour, taken at supper time, with a cup of cold water, instead of other meat or drink, has been often known to cure a hoarseness, so that the voice has become clear and natural the very next day. Such as have fiery faces and carbuncled noses, which usually proceeds from the abuse of wine and spirituous liquors, or have cutaneous affections in any other part of the body, may, by constantly drinking cold water, in the course of a few weeks recover the natural colour of their face and skin. It matters not whether the redness proceeds from drinking too freely or from any other cause.

“The immersion of the hands and feet into cold water recovers them, when frozen or benumbed with cold, in about half an hour, the water being from time to time renewed. This effect will be the more certain, if, while the hands or feet are in the water, the patient drinks a good draught of warm wine, spiced with nutmeg or cinnamon. The parts affected should be afterwards wiped dry with a linen cloth, and well soaped; but the patient must not for a time approach a fire.”

Cites Hippocrates, (sect. v. app. 21 and 25,) that the effusion of cold

water cures the cramp, convulsions, and tetanus, but acknowledges he has never made trial of it in these disorders. That a sudden fright has driven away a quartan ague, by plunging a patient into cold water.

“ Strains, bruises, and large tumours may be more safely and certainly cured by bathing the part in cold water than by any other remedies. Hippocrates had good reason for telling us that the gout was to be cured by a large effusion of cold water; for it is certain, holding the foot a long time in it, abates both the swelling, redness, and pain.

“ The immersion of the head in cold water gives relief in the headache. It should be bathed from the middle of the back part to the end of the nose, leaving out the nostrils, during the time it takes to repeat the Lord’s Prayer. Or, instead of such immersion, which is inconvenient for women, a linen cloth dipped in cold water and so applied to the head, may do as well. It should be well wrung out, and changed from time to time, and applied to the head for half an hour, after having first covered the head all over with another dry linen cloth doubled.

“ Sir Toby Mathews, an English knight, had been afflicted for twenty years with a violent pain on one side of his head, accompanied with a constant discharge through his nostrils, so that his pocket handkerchief was always wet. By the immersion of his head in cold water he was cured of this disorder in the sixtieth year of his age. He has now passed his seventieth year, and has continued free from it, enjoying better health than he had done before; but, to prevent a relapse, he fortifies himself by dipping his head into cold water every day of the year, the depth of winter not excepted. Celsus (lib. 1. cap. 4 and 5,) says, that, for such as are suffering from infirmities of the head, or are afflicted with sore eyes, a sense of heaviness, running at the nose, or enlarged glands, nothing is so good as cold water; the head should be placed for a little while every day during the summer under a full stream of running water.”

For pain or stone in the kidneys, he further advises a linen cloth to be dipped in cold water and applied to the part for a considerable time, frequently renewing the application.

Cold water cures all recent wounds without any suppuration.
“ Having well considered the effects of cold water, I felt persuaded that many kinds of fresh wounds, both of the head as well as other parts, might be perfectly cured by first intention.” Here Vander Heyden gives his reasons why he arrived, *à priori*, at this conclusion. “ I can

assure the reader," says he, "from the most careful observation, that, for fifty-three years past, (for so long it is since I first thought of this way of curing wounds upon the leg and other parts, and which I had never before either read or heard of,) I have never known such injuries (as a broken shin,) become very painful, much less fatal to any of my patients, but have invariably obtained all the success that could be desired."

Vander Heyden's method of treating a broken shin. "The patient is to bathe his leg in cold water for at least half an hour, or, rather, an hour; the water, from time to time, to be renewed, so that the injured part may be reduced to its natural temperature, or rather colder than before. This being done, nothing at all should be laid upon the wound, but some of the thin skin or membrane which adheres to the inside of an egg-shell. It is then to be covered with a dry linen cloth; others dipped in cold water, and well wrung out, are to be applied over this, which are to be changed very frequently, at first every quarter of an hour, so as to keep down the inflammation, and free the part affected from heat and pain. This application or treatment is to be continued in the same manner for four or five days consecutively, or until such time as the wound has healed up. At other times, while the thin egg-skin was sticking to the wound, and when there was very little or no sense at all of heat or pain, I have ordered a linen cloth, dipped into cold water and well wrung out, to be wrapped about the wound as before mentioned. Should there be any matter formed under the skin, it is to be removed; and, after cleansing the wound, put to it the *emplastrum diapompholigos*,* and then cover the place with a linen wrapper dipped in cold water, and afterwards well wrung;" or, in other words, apply a wet bandage. Vander Heyden gives two cases: the first an old man, where the wound or broken shin extended from the knee almost to the ankle; the other a nobleman, eighty-four years of age, where, in consequence of digestive ointments having been improperly applied, suppuration had taken place. He says, "the egg-skin should be very carefully watched, that it may keep on for some days or weeks together, according to the constitution of the patient, till the wound being closed up it falls off itself." He had often observed, when this egg-skin was gently taken off, nature has of herself fortified the part with a dry hard scab, which fell off, in like manner, when the wound was perfectly healed.

* This salve or plaster was composed of verdigris and lapis calaminaris.

He further observes, that, "when the periosteum, or skin surrounding the shin bone, is inflamed by a wound or bruise, the use of suppurating remedies increases the heat and pain, promotes the formation of purulent matter, or of an abscess, or erysipelas, not unfrequently terminating in mortification.*

"I have endeavoured to persuade many surgeons, some enjoying the highest reputation, that in the cure of wounds (where the circumstances attending it will admit of this treatment) they should quit the beaten tract in the first application (of remedies which promote suppuration), and, by using a remedy which gives immediate relief and easy to be applied, aim at the speedy gratification of the patient's desire; that as they would preserve a clear conscience, they should be more solicitous of their professional reputation than, by a protracted cure, of private emolument. Some, trusting to my advice, and finding the result crowned with success, have confessed it was to be preferred before all other means, though they were very sensible they should be considerable losers by bringing so simple a remedy as COLD WATER into common practice."

He concludes this valuable little treatise on cold water with the following well-known quotation:

"Tollere nodosam nescit medicina podogram;
Sed gelidis multis auxiliatur aquis."—OVID.

In vain the knotty gout to physis flies,
WATER alone the certain cure supplies.

JOHN HANCOCK, D.D. 1700.

Febrifugum Magnum; or, Common Water the best Cure for Fevers.

This popular little work passed through many editions. It roused the anger of the profession, and those who were afraid to meddle with men like Sir John Flower, or Dr. Baynard, considered Dr. Hancock a legitimate object of attack. Various pamphlets were written against him. Some in a grave style, abounding with false theories on the causes of disease, and on the actions of medicines; others turning it into ridicule, and filled with foolish witticisms, as the *flagellum*. Dr. H. does not appear to have employed the cold

* Hence we perceive Vander Heyden's judicious practice was simply to exclude the atmospheric air from irritating the wound, to keep down the inflammation by means of cool evaporating bandages, and thus to heal it by first intention.

bath, or the affusion of cold water, but confines himself simply to cold water as a drink, enjoining rest and abstinence.

Scarlet Fever.—One of his daughters fell ill of a fever: he sent her to bed, made her drink half a pint of water, told her to eat nothing, and not to throw off the clothes. In less than half an hour the eruption came out; he found her all over as red as blood. He gave her little but toast and water, and water gruel from time to time. Three or four of his other children fell ill of the same disease, but had it more gently. He treated them all after the same manner; they speedily recovered, most or all of them before the one that had it first.

Small-pox.—The last of his children that had the small-pox fell ill, as he thought, of a fever with pretty violent symptoms. He treated her in his usual manner, gave her a good dose of water in bed; expecting it would bring out a sweat, which, contrary to his expectations, it failed to do. She continued her cool regimen; and on the fourth day, the small-pox appeared. Had from time to time water gruel or some thin water pap for nourishment. The pustules came out very thick, very distinct, rose high, and looked very well. Had no pain in the head, no tendency to delirium, nothing like coma, nor more drowsiness than any one might have that lay in bed. Had no sore mouth, nor sore throat; slept as well during the night as if she had been well, and lay awake most part of the day. When the pustules died away there was no second fever. Nothing was done to her face, and when the scabs were off, there appeared no disfiguring seals or pits.

From this case he draws the following very judicious inference, applicable to every disease attended with fever. Hence it appears, the principal thing to be attended to, in small-pox and in all other eruptive fevers, *is to quell the fever at the very first.* If this can be done, the eruption takes place without any dangerous symptoms attending it. “Do,” says he, “but bring the blood as near as you can to its natural state of circulation, and all will be well.” It is the violence of the fever that either hinders the eruption from coming out at all, when nothing but death is to be expected, or makes it come out unkindly, irregularly, untimely, or with dangerous symptoms. The windows of the room should be opened sometimes to let in fresh air, but care should be taken not to allow the wind to blow upon the patient.

Measles.—He had another daughter who fell ill of this disease.

She was attended by their old family apothecary. About 3 o'clock in the morning his wife called him out of bed, saying, that his child was dying. He found her as if struggling for life. On examining her breast, he found the measles had gone in, nothing but livid spots remained, and he concluded she was past recovery. He fetched a pint of cold water and a small wine-glass; giving her only a small quantity, not knowing what might happen upon giving her a larger draught. In the course of a few minutes he gave her a second; after some time a third, and a while after a fourth. Before giving her the fourth glass, he again examined her breast, and found the measles had come out again, looked very red, and rose as high as they ever do. Before the water, she breathed with great difficulty, perfectly struggled to get breath, was in a burning dry heat, and in a kind of agony. Before she had drank all the water, she breathed with great ease and freedom. Soon after the fourth glass she fell into a quiet, easy sleep, slept about four hours, waked pretty well, and was never in any danger after, but recovered in a short time.

Gout.—He relates, upon hearsay, the case of a person who had been so much afflicted with this disease, that he had a box of chalk-stones of his own growth. He was advised to drink nothing but water, *and for some time to put garlick in it.* He accustomed himself to this drink. The gout never returned; and after a while he became as well as he had ever been before he was attacked with this disease.

Plague.—A gentleman, formerly Consul, and a merchant at Morocco, related to Dr. H. that he fell ill of this disease. "One of his brother factors took care of him, and gave him a dose of rum, or some spirituous alexipharmic. Finding himself in a violent heat, without any sweat at all, he begged of a Jew, who was left in attendance, to bring him some cold water. The Jew replied he durst not do it; however, for a fee of two or three ducats, he was persuaded to do it. Having drank the water, he composed himself, and soon fell into a violent sweat. He felt a pricking pain in his arm-pit, which was the beginning of a bubo. He avoided taking the prescribed doses all the next day, but at night his friend came to him and forced him to take another dose of rum. This took off the sweat; the fever returned, and the bubo disappeared. For another ducat he got some more water; his sweat returned. After that, he prevailed with the Jew to throw all his hot doses away; he recovered, and, with due regimen after, was very well.

"A gentleman, travelling in Arabia, when he came to Mount Sinai,

fell ill, as it proved, of the plague. Finding himself extremely hot, and burnt up with thirst, first bathed, and then drank a deal of water in bed, not knowing what his distemper was. It brought out no less than four or five buboes, and he was well in a little time."

Where it is necessary to employ diluents, according to the advice of Borelli on fever,—*adhibito cibo, et potu tenui et aquoso*,—a low diet with a thin watery drink—water must be the best: "for," says Dr. Hancock, "I think no drink can be more thin, small, weak, and watery, than water itself." He says he has had more than twenty years' experience, that a good dose of cold water will, in most fevers, if taken in time, and in bed, open the glands of the skin, and produce a plentiful sweat. In this method of sweating there is no occasion to add more covers than the patient commonly lies under. The fever is so quelled, and the pulse beats so easily, that no one would believe the patient was in a fever.

Half a pint will generally serve to sweat a grown child; from a pint to a quart an adult. In fevers with eruptions, as the scarlet fever, small-pox, measles, the water will not make the patient sweat, but will so quell and keep under the fever, that the eruptions will come out more easily and kindly.

JOHN KING. 1738.

An Essay on Hot and Cold Bathing.

In a letter from Sir John Floyer, addressed to this author, we meet with the following observations:—"Tender patients may be reconciled to the use of cold baths, by bathing in a tub of water, to which may be added a pail of boiling water. A general method of so much bleeding and purging must be used before the cold bathing, as the disease requires. The rickets are commonly cured by dipping the children a year old in the bath every morning. Has observed, that old women stop violent uterine hæmorrhage by cold bathing. Cold baths prevent the infection of fevers, by making the body less sensible of the changes of air." He recommends those who take chalybeate waters not to use cold water after cold bathing; the bathing helps the passing of the waters, but cold water after cold bathing chills too much.

Mr. King gives about fifty cases, most of them nervous and rheumatic, cured by the cold bath. "The following case," he says, "was sent by a physician, whose patient the young gentleman was:—He

gradually recovered from the most tabid, emaciated condition, to florid and vigorous health :—

“ Juvenis quidam annorum 18 pondus elevare nixus, vires pueriles longè superans, dolorem illicò sensit ingentem in lumborum regione et circumcìrca. Non multò postea frequentissimam et omninò involuntariam seminis jacturam perpessus est ; vires, appetitus et functiones animales sensim deficiunt ; tandem ad tabem et marasimum extremum redactus est, et adeò debilitatus ut cubiculi spatium perambulare nequibat. Duobus annis elapsis ad Balneum vestrum frigidum profectus cùm quotidie, ad mensem sese immerserit (Vomitione bis vel ter prius repetitâ, et interim Tinct. Antiphthiscâ et aliis astringentibus probè exhibitis) domum rediit floridus, robustus et absolutè sanus.”

In a letter from Dr. Browne to Sir John Floyer, the Doctor remarks that the use of cold baths has been neglected, especially since the reformation, and the invocation of saints has been disused. That the generality of the cold springs in England were dedicated to some saint or other, and the reputation of the well declined with that of the saint ; but still the superstition of washing in these holy waters remains in several parts of England to this day. (15 Dec. 1706.) Nothing is more common in the North than to reserve bathing till the saint's day which the spring takes its name from, when they generally observe the custom of leaving something behind them, if it be but the value of a pin, by which means they suppose they leave the disease behind them too.

“ The causes of all our rheumatisms,” he says, “ are chiefly owing to the late practice of drinking hot liquors, and the pernicious use of *flannel* and *woollen shirts* next to the skin.”

In a letter from Sir Theodore Colladon, Knt., to Dr. Baynard, it is reported that “ Dr. Cyprianus (a very celebrated lithotomist of that time) had, for the last two or three years, become so infirm, and apt to *fevers*, that, winter and summer, he was forced to wrap himself up in *flannel*, and *leatherdoom*, and upon the least cold or windy weather fell into violent fevers and defluxions. He tried every remedy, and consulted the most eminent physicians, without success. Two years together he went to Bath, and drank the waters regularly, bathed in all the three baths, but still found no benefit, but was rather worse. With much difficulty he was persuaded to try what the *cold bath* would do in his case; and in *twice* or *thrice* going in, even in the midst of winter, was so relieved, that he has been already in it above a

hundred times, and now is so well and so hardy, that nothing can hurt him : he has left off all his *flannels*, and, in fine, is perfectly recovered.

“ Major Sutton, Lord Lexington’s cousin, had been seized with so violent a rheumatism, that he not only lost the use of his limbs, but was in such great pain, that, finding no relief by all the remedies he used, he was carried and thrown into the cold bath, desiring, as he told me, to be drowned in it if he had no relief ; but in three times going in, he could walk, and came out without help.”

DR. WRIGHT, whose success in his own case determined Dr. Currie to have recourse to the same practice, as fully narrated, observes—
 “ In all cases where there are visceral obstructions, cold bathing does much mischief ; and in fevers of this sort, with inflammatory diathesis, there is reason to suspect topical inflammation of the viscera ; in this last case, if cold bathing were made use of, the patient would run the risk of his life, and the physician justly lose his character. In such cases, after clearing the stomach and primæ viæ, he ordered mild antimonials, opiates, and calomel ; by these means the disorder is soon removed, (alluding to quartans, double tertians, and simple intermittents,) as has been experienced in a great number of cases attended with the most unfavourable appearances.”

DR. RUSH.

An Account of the Bilious Remitting Yellow Fever of Philadelphia.

He says, cold water was a most powerful and agreeable remedy in this disorder. He directed it to be applied by means of napkins to the head, and to be injected into the bowels by way of glyster. It gave the same ease to both, when in pain, which opium gives to pain from other causes. He likewise advised the washing of the face and hands, and sometimes the feet, with cold water, and always with advantage. “ It was by suffering the body to lie some time in a bed of cold water, that the inhabitants of the island of Massuah* cured the most violent bilious fevers. When applied in this way, it gradually abstracts the heat from the body, and thereby lessens the action of the system. It differs as much in its effects upon the body from the cold bath, as rest in a cold room differs from exercise in the cold and open air.

“ Cold water, when applied to the feet, as certainly reduces the pulse

* Bruce’s Travels.

in force and frequency, as warm water, applied in the same way, produces contrary effects upon it."

Dr. Rush was opposed to the use of the cold bath, and says, it was only useful in those cases where its sedative prevailed over its stimulating effects. In two cases, in which he prescribed it, it produced a gentle sweat, but it did not save life. In a third, it removed a delirium, and reduced the pulse for a few minutes, in frequency and force, but this patient died. He afterwards observes, "it is to be lamented that the remedy of cold water has suffered in its character by the manner in which it was advised." Yet, he remarks, that the yellow fever of the previous autumn was often cured on the first or second day by a copious sweat. It is clear that Dr. Rush did not know the mode of employing the cold bath according to the judicious rules laid down by Dr. Currie.

He states that "the third, fifth, and seventh days were mostly critical; and the disease generally terminated on one of them in life or death. An eruption on the third or seventh day over the body proved salutary. An excessive heat, and burning about the region of the liver, with cold extremities, portended death to be at hand.

"In some cases there was a preternatural secretion and excretion of mucous from the glands of the throat. It was discharged by an almost constant hawking and spitting. All who had this symptom recovered." In another place he says, he had observed a favourable issue of the fever in every case in which a spontaneous discharge took place from the salivary glands.

"This epidemic was at last arrested by cold rainy weather. The clouds at last dropped health in showers of rain, which continued during the whole day (15th October), and which were succeeded for several nights afterwards by cold and frost. The appearance of this rain was like a dove with an olive branch in its mouth.

"The refugees from the French West Indies universally escaped this epidemic. But such was not the case with the natives of France, who had been settled in the city. At Nimeguen, in 1736, Deignier informs us that the French people, (two old men excepted,) and the Jews, escaped a dysentery which was universal amongst all other nations. Ramazzini tells us that the Jews at Modena escaped a tertian fever which affected nearly all the other inhabitants of the town. Shenkius says that the Dutch and the Italians escaped a plague, which prevailed for two years in one of the towns of Switzerland; and Dr. Bell remarks that the gaol fever which attacked the soldiers of

the Duke of Buccleugh's regiment, spared the French prisoners, who were guarded by them. It is difficult to account for these facts. However numerous their causes may be, a difference in diet, which is as much a distinguishing mark of nations as dress or manners, will probably be found to be one of them."

DR. CHISHOLM, in his account of the Boullam fever, speaking on this exemption from disease, very judiciously remarks, that "*during the prevalence of a pestilential fever, the great prophylactics are temperance in eating and drinking ; regularity in exercise ; the proper distribution of time with respect to sleep and watching ; attention to cleanliness of person ; and the avoiding such gratifications as have a tendency to weaken the vital powers.* The words of Celsus, in his *Observatio in Pestilentia*, or fevers arising from marsh effluvia, are very comprehensive: "*Vitare fatigationem, cruditatem, frigus, calorem, libidinem ; multoque magis se continere.*" Whilst the pestilential fever raged here, the utility of these means was remarkably illustrated by the almost total exemption of the French inhabitants from the disease. Their mode of living, compared to that of the English, is temperate and regular in an uncommon degree ; animal food and strong liquors are very moderately used by them ; vegetables and small red wine chiefly compose their diet ; their passions are seldom excited to any degree bordering on excess ; their minds seem in general tranquil, or actuated by a vivacity peculiar to themselves ; and depression, or that state of the animal spirits they call *ennui*, is never perceived to have place among them."

ROBERT KINGLAKE, M.D.

Dissertation on the Gout. 1804.

He was in the habit of prescribing the "*Aqua ammoniæ acetata*," conjoined with common water, "not," he says, "with a view to any discutient quality, but merely to avoid exciting any dread, in the apothecary who furnished it, against the use of cold water alone, which would probably have proved an impediment to its due application."

When the inflammation was accompanied with a sensation of burning, he ordered the patient's limbs to be enveloped with cloths dripping with cold water, which were renewed about every half hour. In a case of acute rheumatism, as well as in others, he states, the moisture was detached by evaporation from the cloths, as rapidly as

if held before a fierce fire. The pain, as always happens, was speedily assuaged, but soon recurred, if not prevented by a timely renewal of cold. The irritation (the seat of the disease?) alternately changed its position for several weeks, during all which time the patient might be said to be soaked in cold water.

His practice, which excited much opposition, seems to have been confined to the topical application of wet linen, combined with medicine.

DR. FITZPATRICK, (of Dublin,) in the ninth volume of *Med. Com.*, p. 227, gives an account of the extraordinary effects arising from the application of cold water after delivery. In this interesting case, the patient, who had kept her bed for two months previously, afflicted with a constant uterine discharge, was greatly reduced and debilitated. He placed her in a cold bath immediately after delivery, with the most beneficial result.

Two Cases of Constipated Belly, cured by the external application of Cold Water; in a Letter from James Spence, M.D., of Guildford, to Henry R. Reynolds, M.D. Read at the College of Physicians, 12th Aug. 1784. Med. Trans. vol. iii. p. 96.

"CASE I.—A man, aged fifty-four, servant to Lord Grantley, had ridden much, lived freely, and had been particularly addicted to the drinking of spirituous liquors. On the 20th of March, 1784, he began to feel a tension and fulness of the stomach and belly, after a costiveness of more than a week's standing: from that day to the 24th, he took four ounces of sacred tincture by spoonfuls; swallowed a great number of cathartic pills; had frequent draughts, with rhubarb, jalap, and salpolychrest, besides purging clysters often repeated, without procuring any evacuation.

"On the 25th and 26th he had four ounces of castor oil given him, by spoonfuls at a time; the fumes of tobacco were also thrown up plentifully, and renewed every four hours.

"At first this occasioned some stir in his bowels, which he had not before felt; and, by the escape of some wind, he imagined his cure almost effected. Next day, however, (the 27th,) his uneasiness increased, and the tension was as great as ever; and there seemed no symptoms of his body becoming soluble. From this day to the 3d of April, a variety of purgative mixtures and draughts, besides many pills, and calomel to the quantity of ten grains, was given him. He

was put into the warm bath ; and purgative clysters, and tobacco fumes, were occasionally injected. A person in the family having expressed a desire that the effects of James's powder might be tried, a paper of it was administered at twice, without any sensible effect.

"Hitherto he had supported himself with wonderful spirit and resolution ; his health, as he himself said, was as good as ever ; his pulse little altered ; his tongue kept moist ; he made water freely ; and walked about the room ; drank plentifully of tamarind tea, or infusion of cremor tartari, and ate of gruel, which was his favourite food. From the above period to the 15th, the tension, and uneasiness from it, was gradually becoming more and more intolerable ; his pulse quickened ; his countenance changed ; and a nausea and indifference to all foods and drinks took place. There was a visible aggravation of all his former symptoms ; and he became almost unable to move from off his bed. He at times seemed comatose ; had almost an incessant hiccough, and such stercoraceous vomitings for more than a week, that scarcely any person could stand near him, the smell was so strongly excrementitious. On the first appearance of these symptoms, four ounces of quicksilver were ordered for a dose, morning and evening, until he swallowed a pound weight of it ; and a large blister was applied to the abdomen. His former medicines were also occasionally administered ; and a laxative stomach pill, with essence and extract of chamomile, given him.

"As a last resource, I now wished to attempt exciting the action of the intestines, by throwing cold water from the lower extremities upwards ; and, by way of encouragement to this experiment, I mentioned the cases related by Dr. Stevenson, in the Edinburgh Medical Essays.

"My patient's anxiety to have this tried overruled all objections started by others ; accordingly, on the evening of the 17th he was helped into the wash-house, and led along on the cold wet brick floor, while cold water was dashed on his naked limbs, as high as the os pubis, for above a quarter of an hour. He bore it better than his assistants could have imagined, and returned to his chamber in better spirits than when he left it.

"When I visited him next day, he expressed a wish that the water had been thrown higher up on his body ; and said he felt rather stronger and lighter than before the water had been applied. It was accordingly settled, that the application of it should be repeated early next morning, and in a more forcible manner. Monday, the 19th, between seven and eight o'clock, he was taken into the brewhouse,

stripped as high almost as his shoulders, and water dashed in a large quantity, from his legs upwards, on the abdomen, and on his back, as high as could be done without wetting his shirt, which was thrown across his shoulders. He expressed that *it affected him like electricity*, and penetrated through his very vitals.

"After having lain in bed a few hours, a tendency to stool was perceived, and a plentiful evacuation soon succeeded. This was followed by several more, betwixt this time and the next morning; his hiccough, which was still frequent, became more moderate; the tension of his belly disappeared; his countenance and spirits brightened up; he called for food and drink, and in a few days was able to walk about the yard and house. For five or six days after a discharge had been procured, he had frequent calls to stool, which were sometimes knotty, but mostly very thin and liquid; and the bowels could scarcely retain or digest the aliment he took; it passed so suddenly and quickly through him for almost a fortnight.

"It was likewise about the fourth or fifth day after his relief, before any quantity of the quicksilver was voided. Yet there was recovered about twelve ounces of it; and now, though still thinner than before his illness, he seems hearty, and says he never was better in his life.

"CASE II.—The town-sergeant of Guildford, aged sixty-one, tall, healthy, temperate, industrious and active. Had been previously subject to constipation, with symptoms of colic and obstruction in his bowels. Was taken ill on the 18th of April, with violent pain and distension of the abdomen, which sounded, when smartly touched with the hand, like a blown-up carcase.

"Purgative medicines and tobacco fumes were tried in vain. On the evening of the 15th of May, he was assisted down stairs into the brewhouse, and basons full of cold water were dashed on his limbs, as high as the os pubis. Before his return to bed, he expressed the same wish as the former patient, that they had thrown the water upon his stomach and belly. On the 6th and 7th he had no symptoms of a tendency to have stools. The distension and flatulency were still very great, with a rumbling noise that could be heard at some distance.

"On the 8th, no benefit having been received, and being too weak to be taken down stairs, I directed in the evening, *towels soaked in cold water to be thrown from some distance on his swollen belly, and the region of the stomach.* He also said, that *this affected him like a stroke of electricity.* At his own request a large glass of cold water was given him to drink. About ten o'clock he had a sudden call to

the close stool, and a very violent explosion of wind, which before midnight was followed by three very copious foetid stools.

“On the 9th he still complained of fulness, and large knobs arising, which distended his bowels; with severe gripings and rumbling noise. On the 10th the cold wet cloths were renewed, being dashed on the epigastric region and abdomen as before, and with similar success.”

From the remainder of this case, it does not appear that the application of cold water was repeated. Quicksilver had also been given. He gradually recovered, and on the 9th of June the feverish and other symptoms had disappeared.

JOHN SMITH, C. M.

The Curiosities of Common Water.

The author of this treatise has collected the opinions of the most eminent physicians on the efficacy of cold water in curing and preventing diseases, to which he adds the testimony of his own, during a period of forty-four years, from the age of thirty to seventy-four, and that it may, in some sense, be truly styled *an universal remedy*, since, in the diseases it either prevents or cures, it is applicable to all persons and in all places.

Many of the authorities he quotes merely confirm what has been already stated in the copious extracts from the treatise of Sir John Floyer on cold bathing, and therefore need not be repeated. He notices a fact well known in physiology, that in cases of starvation from want of food, life is greatly prolonged simply by drinking water. “A man attempting to starve himself to death, went without food for twenty days, but drank each day about three pints or two quarts of water, and at the expiration of that time, upon taking a little food, he rapidly recovered his strength. A madman at Leyden, in imitation of the Saviour, fasted forty days without taking any food, only he drank water and smoked tobacco. A poor old woman, in a state of great want, was frequently obliged to pass two or three days without taking any food; she found that drinking water assuaged the cravings of hunger.”

He recommends a piece of linen, doubled five or six times, to be dipped in water, and applied to bruises and tumours, the same to be reapplied as often as it begins to grow warm. In sickness or nausea, the well-known remedy of drinking three or four quarts of warm water, and to excite vomiting by irritating the œsophagus. That this is a certain cure in all surfeits, and infallible in cases of

sickness. In cases of indigestion or repletion a pint of cold water, taken from time to time will digest and carry off whatever is offensive to the stomach. That vomiting with warm water, and drinking nothing but cold water afterwards, is excellent for shortness of breath. In cases of violent vomiting, it prevents straining and the danger of bursting a blood-vessel. In sickness and diarrhœa, Sigismundus Gresius used to order pure water to be drank in large quantities. Sydenham cured a case of cholera by four gallons of water in which a chicken had been boiled, partly to be drank and partly to be administered as an enema. Cites a case of acute dysentery cured by Lusitanus with cold water; also, other diseases cured by the same means. Dr. Betts, being consulted in a case of small-pox, where the eruption did not come out kindly, ordered *two quarts of cold water* to be drank as soon as could be; upon which they came out according to expectation, and the party did well. He then gives the concurrent testimony of ancient and modern physicians, including Galen, that cold water is a safe and effectual remedy in burning fevers, *providing it be drank in great abundance*. Dr. Quinton mentions a case of typhus fever, where three quarts of water had been given, at several draughts, to induce vomiting; it did not operate that way, but greatly refreshed the patient, *raised the pulse*, brought on a gentle perspiration, and passed off by urine. He states, that in lowness of the pulse he has often found it to be raised by drinking water plentifully. He ordered a pint of cold water to be given to a woman in a state of delirium: in three or four minutes she came to her right senses, and, desiring to drink more, recovered from the fever.

“Chalybeate waters strengthen the stomach, not so much from the iron held in solution, as from the large quantity of cold water which is drank; and that physicians, in sending their patients to watering places, tacitly acknowledge that they are baffled, and that all their prescriptions may be excelled by water.

‘The steel is a cheat,
 ’Tis water does the feat.’”

He gives the case of “a man with a large ulcer in his foot, which was cured by wading in a river, where he staid above two hours fishing. Bathing the part in cold water is excellent for strains. It is a common practice to wind haybands around the legs and joints of horses, and from time to time throw over them a pailful of cold water.”

Want of sleep in fevers may be cured by cold water.—“To a near relation in a fever, who could not sleep for three days and three nights, I ordered a towel to be several times folded up, then to be

dipped in water, and a little wrung out, *and so laid upon her forehead, and to be new dipped as it grew hot*; which, in about two hours, so cooled her head, that she fell into a sleep, and continued in it five hours, and I ordered the same to be done the next night with the same success. Dr. Cockburn, in his treatise on sea diseases, for the want of sleep in fevers, orders a towel, four times doubled, to be dipped in *oxycrate*, which is six parts water and one of vinegar, to be bound over the head and temples, which, he says, will cause sleep with wonderful success. But cold water only will have the same effect, as I often have proved."

He quotes the celebrated Pitcairne, who says, "there is no such thing as the art of curing, but only the practice. Remedies were found out by chance. If physic were an art, it would not be necessary to try experiments, because the rules of art are certain. Celsus says the remedy was not found out after the reason, but the reason was looked for after the remedy had been found effectual.*

"If a drunken man be plunged over head and ears in cold water, he will come out of it perfectly sober; from whence Dr. Browne concludes, that which will make a drunken man sober in a minute, will certainly go a great way towards the cure of a madman in a month. Thus, Dr. Baynard relates the case of a man raving mad, who, being bound in a cart, stripped of his clothes, and blind-folded, that the surprise might be the greater, on a sudden, had a great fall of water let down upon him from the height of twenty feet, *under which he continued so long as his strength would permit*. After his return home he fell into a sleep, and slept twenty-nine hours; then awoke in a quiet state of mind, and has continued so ever since."

He then relates cases of fever, of cutaneous and other diseases, cured by cold water. He observes, that "sweating in fevers, by drinking cold water, is more natural than by hot sudorifics;" and strongly recommends vomiting with warm water in the first instance, as he considers the stomach the principal seat of all diseases.

"Cold water is an absolute cure for all small cuts in the fingers or other parts; for if you close the cut up with the thumb of your other hand, keeping it so closed for a quarter or half an hour, it will infallibly stop the bleeding; after which, if you double up a linen rag five or six times, dip it in cold water, and apply it to the part, *binding it on*, this, by preventing the inflammation, and a flux of humours, will give nature time soon to heal it without any other application."

* Physic may be defined a speculative science, founded on experiment.

DR. CURRIE.

Medical Reports on the Effects of Water as a Remedy in Fever and other Diseases.

Contagious Fever.—Dr. Wright's description of his own case :—
“Sept. 5th, 6th, and 7th.—Small rigors now and then ; a preternatural heat of the skin ; a dull pain in the forehead ; the pulse small and quick ; a loss of appetite, but no sickness at stomach ; the tongue white and slimy ; little or no thirst ; the belly regular ; the urine pale and rather scanty ; in the night restless, with starting and delirium.

“Sept. 8th. Every symptom aggravated, with pains in the loins and lower limbs, and stiffness in the thighs and hams.

“Took a gentle vomit on the second day of the illness, and next morning a decoction of tamarinds ; at bed-time an opiate, joined with antimonial wine, but this did not procure sleep nor open the pores of the skin. No inflammatory symptoms being present, a drachm of Peruvian bark was taken every hour for six hours successively, and now and then a glass of port wine, but with no apparent benefit. When upon deck my pains were greatly mitigated, and the colder the air the better. This circumstance, and the failure of every means I had tried, encouraged me to put in practice on myself what I had often wished to try on others in fevers similar to my own.

“Sept. 9th. Having given the necessary directions, about three o'clock in the afternoon I stripped off all my clothes, and threw a sea cloak loosely about me till I got upon the deck, when the cloak was also laid aside ; three buckets of salt water were then thrown at once on me ; the shock was great, but I felt immediate relief. The headache and other pains instantly abated, and a *fine glow and diaphoresis succeeded*. Towards evening, however, the febrile symptoms threatened a return, and I had again recourse to the same method as before, with the same good effect. I now took food with an appetite, and for the first time had a sound night's rest.

“Sept. 10th. No fever, but a little uneasiness in the hams and thighs ; used the cold bath twice.

“Sept. 11th. Every symptom vanished, but to prevent a relapse I used the cold bath twice.

“Mr. Kirk, a young gentleman, passenger in the ship, fell ill of the same fever, and was cured by the same means.”

History of the Fever which occurred in the 30th Regiment.

“ The general guard-room had been used previous to the arrival of the 30th, as a place of confinement for deserters; it was extremely close and dirty, and under it was a cellar, which in the winter had been full of water. This water was now half evaporated, and from the surface issued offensive exhalations.

“ In a dark, narrow, and unventilated cell, off the guard-room, it was usual to confine such men as were sent to the guard for misbehaviour, and about the beginning of June (1792) several men had been shut up in this place on account of drunkenness, and suffered to remain there twenty-four hours, under the debility that succeeds intoxication. The typhus, or gaol fever, made its appearance in two of these men about the first of the month, and spread with great rapidity. Ten of the soldiers labouring under this epidemic, were received into the Liverpool Infirmary, and the wards allotted to the fever could admit no more. The contagion continued its progress, a temporary hospital was fitted up at the fort, and I was requested to give my assistance there to the surgeon of the regiment, by Captains Brereton and Torriano.

“ In two low rooms, about fifteen feet square, were fourteen patients labouring under fever. They were in different stages of its progress: one was in the fourteenth day of the disease, two were in the twelfth, and the rest from the ninth to the fourth inclusive. The symptoms of the fever were very uniform. In every case there was more or less cough, with mucous expectoration: in all those who had sustained the disease eight days and upwards, there were petechiæ on the skin; in several there were occasional bleedings from the nostrils, and streaks of blood in the expectoration. The debility was considerable from the first, and it had been increased in several cases by the use of *venesection*, before the nature of the epidemic was understood. The pulse varied from 130 strokes in the minute to 100; the heat rose in one case to 105° Farh., but was in general from 101° to 103°; and towards the latter stages of the disease it was scarcely above the temperature of health. Great pain in the head, with stupor, pervaded the whole, and in several instances there occurred a considerable degree of low delirium.

“ Our first care was to ventilate and clean the rooms, which were in a high degree foul and pestilential. Our second was to wash and

clean the patients themselves. This was done by pouring sea-water over the naked bodies of those whose strength was not greatly reduced, and *whose heat was steadily above the temperature of health*. In those advanced in the fever, whose debility was of course great, we did not venture on this treatment, but contented ourselves with sponging the whole surface of the body with tepid vinegar, a practice that, in every stage of fever, is salutary and refreshing.

“Our next care was to stop the progress of the infection. With this view the guard-house was at first attempted to be purified by washing and ventilation, the greatest part of its furniture having been burnt or thrown into the sea. All our precautions and exertions of this kind were, however, found to be ineffectual. The weather was at this time wet and extremely cold for the season; the men on guard could not be prevailed on to remain in the open air; and from passing the night in the infected guard-room several of the privates of the successive reliefs, on the 10th, 11th, and 12th of the month, caught the infection. In several of these the fever ran through its course; and in others it was immediately arrested by the affusion of sea water as already described. No means having been found effectual for the purification of the guard-room, it was shut up, and a temporary shed erected in its stead. Still the contagion proceeded; on the morning of the 13th three more having been added to the list of the infected. On that day, therefore, the whole regiment was drawn up at my request, and the men examined in their ranks: seventeen were found with symptoms of fever upon them. It was not difficult to distinguish them as they stood by their fellows. Their countenances were languid, their whole appearance dejected, and the adnata of their eyes had a dull red suffusion. These men were carefully separated from the rest of the corps, and immediately subjected to the cold affusion, always repeated once, and sometimes twice a day. In fifteen of the number the contagion was extinguished; but two went through the regular disease. On the same day the commanding officer, at my desire, issued an order for the whole of the remaining part of the regiment to bathe in the sea; and for some time they were regularly mustered, and marched down at high water, to plunge into the tide.

“*These means were successful in arresting the epidemic: after the 13th of June no person was attacked by it.* It extended to fifty-eight persons in all, of which thirty-two went through the regular course of the fever, and *in twenty-six the disease seemed to be cut short by the cold affusion.* Of thirty-two, already mentioned, *two died.* Both of

these were men whose constitutions were weakened by the climate of the West Indies; *both of them had been bled in the early stages of the fever:* and, the one of them being in the twelfth, the other in the fourteenth day of the disease, *when I first visited them, neither of them was subjected to the cold affusion.* The water employed on this occasion was taken up from the river Mersey, close by the fort. It was at that time of the temperature from 58° to 60° of Fahrenheit, and it contains in solution from a thirty-second to a thirty-third part of sea salt."

"The safest and most advantageous time for using the aspersion or affusion of cold water, is when the exacerbation is at its height, or immediately after its declination was begun; and this has led me almost always to direct it to be employed from six to nine o'clock in the evening; but it may be safely used any time of the day, *when there is no sense of chilliness present, when the heat of the surface is steadily above what is natural, and when there is no general or profuse perspiration.* These particulars are of the utmost importance.

"If the aspersion of cold water on the surface of the body be used during the cold stage of the paroxysm of the fever, the respiration is nearly suspended; the pulse becomes fluttering, feeble, and of an incalculable frequency; the surface and extremities become doubly cold and shrivelled, and the patient seems to struggle with the pangs of instant dissolution. I have no doubt, from what I have observed, that in such circumstances, the repeated affusion of a few buckets of cold water would extinguish life. This remedy should therefore never be used when any considerable sense of chilliness is present, even though the thermometer applied to the trunk of the body should indicate a degree of heat greater than usual.

"Neither ought it to be used when the heat measured by the thermometer is less than, or even only equal to, the natural heat, though the patient should feel no degree of chilliness. This is sometimes the case towards the last stages of fever, when the powers of life are too weak to sustain so powerful a stimulus.

"It is also necessary to abstain from the use of this remedy when the body is under profuse perspiration, and this caution is more important in proportion to the continuance of this perspiration. In the commencement of the perspiration, especially if it has been brought on by violent exercise, the affusion of cold water on the naked body, or even immersion in the cold bath, may be hazarded with little risk, and sometimes may be resorted to with great benefit. After the perspiration has continued some time and flowed freely,

especially if the body has remained at rest, either the affusion or immersion is attended with danger, even though the heat of the body at the moment of using them be greater than natural. Perspiration is always a cooling process in itself, but in bed it is often prolonged by artificial means, and the body is prevented from cooling under it to the natural degree, by the load of heated clothes. When the heat has been thus artificially kept up, a practitioner, judging by the information of his thermometer only, may be led into error. In this situation, however, I have observed that the heat sinks rapidly on the exposure of the surface of the body even to the external air, and that the application of cold water, either by affusion or immersion, is accompanied by a loss of heat, and a deficiency of reaction, which are altogether inconsistent with safety.

“ Under these restrictions, the cold affusion may be used at any period of fever ; but its effects will be more salutary in proportion as it is used more early. When employed in the advanced stages of fever, where the heat is reduced, and the debility great, some cordial should be given immediately after it, and the best is warm wine.”

“ A nurse in the fever ward of the infirmary caught the infection. She was seized with violent rigors, chilliness, and wandering pains, succeeded by great heat, thirst, and headache. Sixteen hours after the first attack, her heat at the axilla was 103° of Fahr., pulse 112 in the minute and strong ; her thirst great, her tongue furred, and her skin dry. Five gallons of salt water of 44° were poured over her naked body, at five o'clock in the afternoon, and after being hastily dried with towels, she was replaced in bed ; when her agitation and sobbing had subsided, her pulse was found to beat at the rate of 96 strokes in the minute, and in half an hour afterwards it had fallen to 80. The heat was reduced to 98° by the ablution, and half an hour afterwards it remained stationary. The sense of heat and headache were gone, and the thirst nearly gone. Six hours afterwards she was perfectly free from fever, but a good deal of debility remained. Small doses of colombo were ordered for her, with a light nourishing diet, and for several days the cold affusion was repeated, at the same hour of the day as at first ; the fever never returned.

“ During the progress of the fever, when epidemic, a great number of cases similar to the above have occurred, in which the disease was suddenly cut short by the use of the cold affusion on the first and second day ; twenty-six of these cases were in the 30th Regiment.

In all these the result was precisely similar to the one related.—In cases in which the affusion was not employed till the third day of the fever, I have seen several instances of the same complete solution of the disease. I have even seen this take place when the remedy has been deferred till the fourth day ; but this is not common.”

Here some cases are detailed, from which the following conclusion is drawn:—“It appears, that the cold affusion, used on the third and fourth days of the fever, does not produce an immediate solution of the disease ; but that it instantly abates it, and by a few repetitions brings it to a happy termination in two or three days.”

“I have frequently used the cold affusion in the last stage of the paroxysm of intermittents, and almost always with the immediate solution of the fit ; but in general, if no remedy be used in the intermission, the fever returns at the usual period. In some instances, however, the succeeding paroxysm has been prevented by using the cold affusion about an hour previous to the period of its expected return, and the disease been ultimately removed by continuing this practice through four or five of the following periods.”

“It ought never to be forgotten, that an application of cold, which is safe in the violence of fever, is not safe when the fever is removed. Injury has sometimes occurred from continuing the cold affusion in the period of convalescence. Neither is the cold affusion safe after the sweating stage of fever has continued some time, and the body is passing through that cooling process.” In addition to this, “an express exception is made against its use during the feverish chill. An exception is also made against its being employed in the latter end of fever, when the strength is much exhausted, and the heat is sometimes as low or lower than the temperature of health. While, however, the heat rises one or two degrees above the healthy standard, this remedy may be used even in the latter stages of fever. I have employed it with advantage on the eleventh, twelfth, and thirteenth days.—In the first stages of typhus, the low contagious fever of this country, it appears very generally to cut short the disease almost instantaneously ; and even when it fails of this effect, as is usually the case when applied in the more advanced stages, it nevertheless moderates the violence of the symptoms, and shortens the duration of the fever.”

“*Of the use of the Affusion of Cold and Tepid Water in Small-pox.*—In situations where the eruptive fever of small-pox is clearly distinguishable, and where it does not abate sufficiently on the admis-

sion of cold air, the affusion of cold water may be resorted to with confidence and safety, regulated, however, in this application, as in every other, by *the actual state of the patient's heat, and of his sensation of heat.*

"In the autumn of 1794, J. J., aged twenty-four, was inoculated under my care. He sickened on the seventh day, and the eruptive fever was very considerable. He had a rapid and feeble pulse, a foetid breath, with pain in the head, back, and loins. His heat rose in a few hours to 107°, and his pulse beat 119 times in the minute. I encouraged him to drink largely of cold water and lemonade, and threw three gallons of cold brine over him. He was in a high degree refreshed by it. The eruptive fever abated in every respect—an incipient delirium subsided, the pulse became slower, the heat was reduced, and tranquil sleep followed. In the course of twenty-four hours the affusion was repeated three or four different times at his own desire; a general direction having been given him to call for it as often as the symptoms of fever returned. The eruption, though more numerous than is usual from inoculation, was of a favourable kind. There was little or no secondary fever, and he recovered rapidly."

From a case of confluent small-pox, which terminated fatally, Dr. Currie concludes, that after the eruption, in this form of the disease, is completely formed, the cold affusion cannot perhaps be used with advantage.

Sir William Watson mentions the case of a young woman, who, in the absence of her nurse, got out of bed delirious, during the eruptive fever of small-pox, and threw herself into the New River, near Islington. She was discovered floating on her face; and when taken out of the water, had not the least appearance of life. She was recovered, however, by the usual methods, and afterwards passed well through the disease.

The following cases of scarlatina anginosa, which were communicated by Dr. Currie's colleague, Dr. Gerard, one of the physicians of the Liverpool Infirmary, cannot fail to excite the most lively interest.

"In the latter end of December, 1796, all the children of a family in his (Dr. Gerard's) neighbourhood, five in number, had been attacked in succession with scarlet fever; four of these were recovering, but one was dangerously ill, when the father of the family, with whom one of the children had slept, was himself seized with all the symptoms of the disease. He had excessive pain in his head and

back, and flying pains all over him. He had frequent rigors, loss of appetite, and sickness, with some flushing of the face, but without any efflorescence of the skin, or affection of the throat. This was his situation when Dr. Gerard was called in, about sixteen hours after the first attack. An emetic, and afterwards a cathartic, were ordered, but their operation was slow and imperfect ; and on visiting him ten or twelve hours afterwards, he was not materially relieved.

“ Entertaining no sort of doubt of the nature of the attack, these symptoms foreboded that the epidemic would, in this instance, be severe ; and Dr. Gerard determined to try the affusion of cold water, from which, in typhus, he had seen such happy effects. Accordingly, the operation was performed, and with a result that far exceeded his hopes. As he was much debilitated, half a pint of hot wine was given him after it, and on being put to bed, the symptoms of fever were found nearly gone ; a genial warmth diffused itself over the extremities of his body, followed by perspiration and sleep. Next day he complained of a slight degree of headache and lassitude ; Dr. Gerard therefore ordered the affusion to be repeated, as well as the warm wine after it ; the symptoms of the disease vanished, and never reappeared.

“ A day or two afterwards, a maid, who had been hired as an assistant to attend the sick children, and who had been about a week in the house, was attacked by the precise symptoms already related, and which had uniformly ushered in the epidemic. She took an emetic on the first attack with little benefit, and soon after the cold water was poured over her, the wine being administered after it. In this case the remedies were used earlier than in the former one ;—they were used once only : the febrile paroxysm was dissolved, and never returned.

“ The result of these cases communicated by Dr. Gerard, leads to a variety of important reflections. That the affusion of cold water extinguishes the incipient scarlatina, as well as the typhus, can scarcely be doubted ; and thus this powerful and simple remedy is extended to another, and a most important class of diseases. That the disease was extinguished without the specific efflorescence of the skin, or affection of the throat, is a circumstance not a little curious. It seems to demonstrate that this efflorescent is the product of the eruptive fever ; and that the fever itself being destroyed in the first instance, the efflorescent matter is never produced. Thus we are freed from the apprehension which a false theory might suggest against extinguishing a process by which nature was extricating

itself from an acrimony which the system had imbibed. Thus, also, our conclusion is supported, that the eruptive fever of small-pox is the cause, and not, as some have supposed, the consequence of the progress of assimilation; and that the diminution of this fever by cool air, and still more by the affusion of cold water, actually diminishes the quantity of matter assimilated, and, in certain cases, wholly prevent the assimilation."

Thus far Dr. Currie. In accordance with the above hypothesis, I beg to quote the following cases, related by Dr. Baynard, on cold baths. "I remember," says Dr. B., "about two years since, a learned divine told me, that in a small town, not far from him, many died of a malignant small-pox. A certain boy, a farmer's son, was seized with a pain in his head and back, vomited, was feverish, and had all the symptoms of the small-pox. This youth had promised some of his comrades to go a swimming with them that day, which, notwithstanding his illness, he was resolved to do, and did so, but never heard more of his small-pox. Within three or four days, the father was seized just as the son was, and he was resolved to take Jack's remedy; his wife dissuaded him from it, but he was resolved upon it, and did immerge in cold water, and was after it very well. A gentleman, delirious in the small-pox, ran in his shirt in the snow, at least a mile, and knocked them up in the house where he went, they being all in bed; the *small-pox sunk*, yet, by the benefit of a looseness, he recovered. Dr. Dover of Bristol told me of a vintner's drawer, in Oxford, that in the small-pox went into a great tub of water, and there sat at least two hours, and yet the fellow recovered and did well."

Dr. Currie observes, that the prevention of the assimilation of small-pox, by wholly extinguishing the eruptive fever, if it were in our power, would not be advisable, since it must leave the patient exposed to the future influence of that contagion.

Sponging the surface of the body with cold water was practised by Dr. J. G. Hahn, of Breslau, in 1736, during the prevalence of a severe epidemic fever, which first made its appearance amongst the cattle.* Dr. Currie quotes several cases narrated in the *Acta Germanica*, and passes the following criticism on Hahn's practice:—"Instead," says he, "of pouring the water over the naked body, he applied sponges soaked in cold water to every part of the surface in succession, and seems to have continued the application for some

* This Dr. Hahn was a cousin of Dr. John Sigmund Hahn, who practised at Schweidnitz in Silesia, and from whose work I have made such copious extracts.

time together ; in my judgment the least efficacious, as well as the most hazardous manner of using the remedy. He does not seem in general to have used the ablutions till the eighth or ninth day of fever, and till the cases were growing desperate from the failure of other means. At this advanced stage, the ablutions, as might be expected, seem to have been of very inferior efficacy. Yet, in the single case in which, from the impossibility of the patient's swallowing medicines, they were used on the second day of the fever, the recovery was speedy ; it appeared certain on the eighth day ; and this might have encouraged an earlier trial of the same practice in other instances. But what appears most surprising is, that he does not seem to have been regulated in the use of this remedy either by the actual heat of the patient, or his sensations of heat. In his own case he expressly declares, that the cold ablutions were used on the fifteenth day of the fever, when he was shivering with cold, and covered with cold sweat ; circumstances under which I should pronounce it to be in the most extreme degree dangerous. From a general review of the incautious practice of Dr. Hahn, I am not surprised that his boasted remedy is, so far as I can learn, no longer in use, either in Silesia or in any other part of Germany."

On the internal use of Cold Water in Fever.

"The doctrine of the celebrated Boerhaave, that a lentor in the blood is the cause of fever, led him to insist on the use of warm drink, and the danger of cold ; and his commentator, Van Swieten, though he allows cold drink in some instances, yet in general argues against it. These learned theorists prevailed in their day over the voice of nature, and the precepts of Hippocrates and Hoffman."

The rules which Dr. Currie lays down respecting the use of cold drink in fever, are precisely the counterpart of those respecting the affusion of cold water. "1. Cold water is not to be used as a drink in the cold stage of a paroxysm of fever, however urgent the thirst. Taken at such times it increases the chilliness and torpor of the surface and extremities, and produces a sense of coldness in the stomach, augments the oppression on the præcordia, and renders the pulse more frequent and more feeble. If the thirst is gratified in the cold stage of the paroxysm, it ought to be with warm liquids.—2. When the hot stage is fairly formed, and the surface is dry and burning, cold water may be drank with the utmost freedom. Large draughts of cold liquids at this period are highly grateful ; they

generally diminish the heat of the surface several degrees, and they lower the frequency of the pulse. When they are attended with these salutary effects, sensible perspiration and sleep commonly follow. Throughout the hot stage of the paroxysm cold water may be safely drank, and more freely in proportion as the heat is farther advanced above the natural standard. It may even be drank in the beginning of the sweating stage, though more sparingly. *Its cautious use at this time will promote the flow of the perspiration*, which, after it has commenced, seems often to be retarded by a fresh increase of animal heat.*—3. But after the perspiration has become general and profuse, the use of cold drink is strictly to be forbidden. At this time, an inconsiderate draught of cold water will produce a sudden chilliness, both on the surface and at the stomach, with a great sense of debility, and much oppression and irregularity of respiration. At such times, on applying the thermometer to the surface, the heat has been found suddenly and greatly reduced. The proper remedy is to apply a bladder filled with water, heated from 110° to 120°, to the scrobiculus cordis, or pit of the stomach, and to administer small and repeated doses of tincture of opium, as recommended by Dr. Rush. By these means the heat is speedily restored. This effect of cold water, used as a drink during profuse perspiration, is precisely analogous to the affusion of it at such times on the surface of the body, a practice known to be of the utmost danger, and enumerated by Hoffman among the causes of sudden death.

“Cold water may be used as a drink precisely the same as a cold affusion, *when there is no sense of chilliness present, when the heat of the surface is steadily above what is natural, and when there is no general or profuse perspiration.*”

Dr. Currie has collected a great many cases of sudden death from drinking large draughts of cold water when in a state of profuse perspiration accompanied with fatigue. Quintus Curtius, in giving an account of the march of the army of Alexander the Great in pursuit of Bessus, says,—“At length, fainting under their toils, they reached the banks of the river Oxus, where, by indulging in large draughts of the stream, Alexander lost a greater number of his troops than in any of his battles.” A similar disaster occurred to the soldiers of a Roman army during the civil wars, and to those of the Christian army during the crusades.

He then recites the dangerous consequences of bathing in cold

* This is exactly in accordance with the practice observed at Graefenberg during the sweating process.

water under the same circumstances; and amongst others refers to the well-known case of Alexander the Great bathing in the river Cydnus. In his concluding remarks, he considers that exhaustion proceeding from fatigue renders it highly dangerous, and gives the following case in point:—In the experiments of Dr. Fordyce and Sir Charles Blagden, no injury resulted from exposure to cold. “‘After exposing our naked bodies to the heat, and sweating most violently, we instantly went into a cold room, and staid there even some minutes before we began to dress; yet no one received the least injury.’ Had they,” observes Dr. C., “continued exposed naked to the cold air till the heat sunk as low as its natural standard, and the heart and arteries subsided into their usual state of action, their situation would have been very hazardous.”

He takes notice of the Russian baths, and mentions “that it is common for the workmen in the glass-manufactory at Glasgow, after enduring for some time the consuming heat of their furnaces, to plunge into the Clyde, a practice which they find in no respect injurious. The Romans heated their baths to the utmost pitch of endurance; and as they rose reeking from their surface, vessels full of cold water were dashed over their naked bodies, as a high gratification in itself, and a means of stimulating their senses to gratifications still higher.”

Remarking on the use of the cold bath in convulsive diseases, he draws the following conclusion, that “the chief benefit derived from the cold bath in convulsive diseases depends on its being used in the paroxysm of convulsion; that its efficacy consists in resolving or abating the paroxysm; and that when this effect is produced, the return of the paroxysm is greatly retarded, if not entirely prevented. He then gives a case of epilepsy in consequence of a fright, cured by the cold bath without medicines. But he used it in other cases without advantage. In another case, where the paroxysm returned periodically every afternoon, a cure was effected by applying a cataplasm, formed chiefly of tobacco, to the scrobiculus cordis, about half an hour before the expected return.”

The following case is interesting:—“My friend, Dr. Ford, has mentioned to me the case of Mr. C. of Bristol, who was instantly relieved of an obstinate stricture of the neck of the bladder of thirty hours’ duration, (during all which time not a drop of water had passed,) by placing his feet on a marble slab, and dashing cold water over his thighs and legs. The effect was instantaneous; the urine burst from him in a full stream, and the stricture was permanently removed.

The common remedies, particularly opium^{*} and bleeding, and each of these very largely, had previously been used in vain.

“Cold water cannot be used as a drink during the paroxysm of convulsions, and of course we cannot show the analogy between its external and internal use in these, as in other diseases. That its effects, taken internally, are most salutary in a numerous class of chronic diseases, is, however, well known, though perhaps not acknowledged to the full extent of the truth. A considerable part of the virtues of mineral waters is doubtless to be attributed either to the diluting quality of the pure element itself, or to the invigorating effects of cold upon the stomach, and, through it, on the system at large.”

He relates a cure of furious insanity, supposed to have been brought on by excessive drinking, after trying various remedies, as opium, foxglove, bark, sulphate of iron, emetics, and the tepid affusion, in vain; at last, the cold bath was decided on. “The patient was therefore thrown headlong into the cold bath. He came out calm, and nearly rational; and this interval of reason continued for twenty-four hours. The same practice was directed to be repeated as often as the state of insanity recurred. Two days afterwards he was again thrown into the cold bath, in the height of his fury, as before. As he came out he was thrown in again, and this was repeated five different times, till he could not leave the bath without assistance. He became perfectly calm and rational in the bath, and has remained so ever since. He never relapsed, and was discharged some time afterwards in perfect health of body and mind.”

General View of Doctrines respecting Fever.

“Hippocrates, perceiving the increase of heat to be the most remarkable symptom in fever, assumed this for the cause, and founded his distinction of fevers on the different degrees of the intenseness of this heat. His practice appears to have been natural and judicious, and founded on his theory.* He directed *linen dipped in cold water to be applied to the hottest parts*; drew blood away both by cupping-glasses and the lancet; and administered cold water and cooling drinks, particularly barley-water and honey.

“It was the postulate of Sydenham that *every disease is nothing else but an endeavour of nature to expel morbid matter of one kind or*

* Contraries are cured by contraries. Aph. xxii. sect. 2.

another, by which the healthy operations are impeded. In this endeavour she is not to be obstructed, but assisted, and the process carefully watched and promoted by which she accomplishes her purpose. By one or other of the emunctories this is finally effected, and till it be effected, health cannot be restored. Under this general notion, the inordinate actions of fever are perpetually compared to the motions of fermentation, by which nature separates the vitiated particles from the blood previous to their expulsion.

“ Hoffman supposed the noxious cause producing fever to operate first on the living solids, occasioning a general spasm of the nervous and fibrous system, beginning in the external parts and proceeding towards the centre. In consequence of this a contraction of the vessels of the extremities must of course take place, impelling the circulating fluids in an increasing ratio on the heart and lungs; which stimulating these organs to increased action, the fluids are thereby repelled towards the extremities, and thus the phenomena of fever are produced. There are therefore two distinct sets of motions in fever, the first from the extremities towards the centre, arising immediately from the spasm, and accompanied by a small pulse, anxiety, and oppression; the second, from the centre towards the surface, which is the effort of nature to resolve the spasm, and marked by a full strong pulse, and increased heat. The first of these sets of motions are baneful, and sometimes fatal; the second are medicinal and salutary.

“ Dr. Cullen introduced a previous link into the chain. He contended that the first effect of the noxious effluvia (the remote cause) was a general debility affecting the sensorium commune; to this debility he attributed the spasm, and to the spasm the reaction of the heart and arteries; which reaction, continuing until the spasm is resolved, removes the debility and the disease.”

Dr. Currie is of opinion “*that the remote cause of fever itself may perhaps be considered as a poison, acting directly on the sensorium commune.*” When this poison is peculiarly concentrated and malignant, or where the system is much debilitated, the powers of life are sometimes oppressed and extinguished in the first stage of the disease.* In general a reaction or resistance commences, while a spasmodic stricture of the extreme vessels opposes the reflux of the

* Porters have been known to drop down suddenly dead on opening bales of goods infected with the miasmata of the plague. In like manner have others on inhaling certain mephitic vapours contained in privies, or on opening places of sepulture.

fluids. This constitutes what appears to be the struggle between the living energy and the morbid cause—between the power of the centre and the resistance of the extreme vessels. *It is a serious error to suppose that the febrile poison, being received into the system, is the principal cause of the symptoms*, and that they consist in a struggle of nature to expel it, without which health cannot be restored. It is safer to consider the febrile poison as an agent that excites the system into fever, *which, however, is carried on, not by the continued presence and agency of this poison, but by the principles which regulate the actions of life*. We are not therefore to wait for the sanative process by which nature is supposed to separate this virus, and to throw it off, watching her motions, and assisting her purposes; but to oppose the fever in every stage of its progress with all our skill, and to bring it to as speedy a termination as is in our power.*

“The duration of immersion must depend on the effects on the pulse, *on the sensations*, and on the heat measured by the thermometer. A greater degree of coolness will be produced by alternately raising the patient into the air, where the wind blows over his naked body, and sinking him into the water, than by continued immersion. The utmost care is necessary in a process of this kind, to guard against the effects of fatigue.” Dr. C. then alludes to the case of Sir John Chardin, “who, when at Gambroom in the year 1673, was cured by this means of a burning fever, attended by delirium, after every other remedy had proved ineffectual. About three years ago, Captain S——, in the height of delirium, sprung out of his cabin-window, and was upwards of twenty minutes in the water. He was taken up perfectly calm, and speedily recovered.

“While the different modes of applying cold water to the surface

* Though I perfectly agree with the practice, yet I can by no means subscribe to the theory, and which appears to me uncalled for. The morbid poison is, perhaps, in every case, not gradually, but suddenly, absorbed into the system, and there is no reason to suppose why it may not be as suddenly expelled. This need not take place by the slow process of “coction,” or by a critical evacuation, but the virus may be conducted at once out of the body by the direct agency of the nervous system. Our observations on the all-important functions of this system are extremely limited. The nervous fluid, like its prototype the electric fluid, seems to possess great powers of conduction. Thus, upon drinking abundantly, in order to prevent a plethora of the vessels, the fluid is conducted direct to the kidneys, across the tissues, without entering into the circulation, which would be a slow process. In a somewhat similar way may the disease be cut short, the morbid particles or miasmata being at once conducted out of the body by the nervous fluid, thus powerfully excited by the galvanic influence of cold water.

are employed, it ought also to be poured into the stomach in large quantities, when the patient's heat will permit it; and the presence of nausea and vomiting is no objection to this practice, *if a chilliness of the stomach is not produced.* (This last caution is of great importance.)

"The salutary effects of the cold bath, and of cold drink in fever, strongly recommend the adoption of these remedies in the plague. Morendi, a physician at Venice, observes, that some sailors at Constantinople, in the phrensy of the plague, have thrown themselves into the sea; and it is said that, on being taken out, they have recovered.

"Savary, in his letters on Egypt, observes, that if heat were the source of their disorders, the *Said* would be uninhabitable. The burning fever (the Causus of the Greeks) is the only one it gives rise to, and to which the inhabitants are subject. They soon get rid of it by regimen, drinking a great deal of water, and bathing themselves in the river. A captain of a ship (a man of credit) having some sailors on board affected by the plague, caught the infection. "I felt," says the captain, "an excessive heat which made my blood boil; my head was very soon attacked, and I perceived I had but a few moments to live. I employed the little judgment I had left to make an experiment. I stripped myself quite naked, and laid myself, for the remainder of the night, on the deck; the copious dew that fell pierced me to the very bones; in a few hours it rendered my respiration free and my head more composed. The agitation of my blood was calmed, and after bathing myself in sea-water, I recovered."

"Masuah," says Bruce, "is very unwholesome. Violent fevers are very prevalent, and generally terminate on the third day in death. If the patient survives till the fifth day, he very often recovers by drinking water only, and throwing a quantity of cold water over him, even in his bed, where he is permitted to lie without attempting to make him dry, till another deluge adds to the first. It is really," he says, "a malignant tertian. It always begins with a shivering and headache, a heavy eye, and an inclination to vomit. The face assumes a remarkable yellow appearance." This, observes Dr. Currie, is doubtless the yellow fever of the West Indies and America.

Speaking of the local application of cold to parts inflamed, he says, "it must not be sudden and temporary, but great in degree, and permanent in duration. Hence the success with which ice and snow, and the clay-cap, are applied to different parts, for the purpose of preventing or reducing inflammation. In all such cases the sensation of cold speedily subsides, and even though ice be lying on the part

affected." The following observation is important. "It is well known that *the general action of cold may be extended over the system by its application to a part.* The use of cold in hæmorrhagies is often regulated by this maxim. I have found that hæmorrhagy from the lungs may be stopped by immersing the feet in cold water, and perhaps this may be done still more certainly by a permanent application of cold to the penis and scrotum, which part with their heat more easily than any other portion of the surface of the body. I have found that a still more powerful effect was produced in hæmoptoe, by immersing the body up to the pubes in cold water, a practice that I can speak of from experience as often safe and efficacious in this disease."

Of Tetanous and Convulsive Disorders.

The history of the case of George Gardner is highly instructive and interesting. "The head was pulled towards the left shoulder, the left corner of the mouth was thrown upwards, the eyes were hollow, the countenance pale and ghastly, the face and neck bedewed with a cold sweat; but his most distressing symptom was a violent pain under the ensiform cartilage, with a sudden interruption of his breathing every fourth or fifth inspiration, by a convulsive hiccup, accompanied by a violent contraction of the muscles of the abdomen and lower extremities. He felt on this occasion as if he had received an unexpected blow on the scrobiculus cordis. Before I saw him he had been bled, and vomited repeatedly, and had used the warm bath, not only without alleviation, but with aggravation of his complaints.

"Opium, mercury, and the cold bath were used in succession. At first, a grain of opium every other hour, afterwards a grain every hour, and at last two grains every hour; but he grew worse and worse during the two days this course was continued. Being no longer able to swallow the pills on the night of the 22d February, general convulsions came on once or twice in every hour. The tincture of opium was now directed to be given, and an ounce of the quicksilver ointment to be rubbed in on each thigh. In twenty-four hours he took two ounces and a half of the tincture without sleep or alleviation of pain. The dose being increased, in the next twenty-six hours he swallowed *five ounces and a half* of the laudanum. He lay now in a state of torpor. The rigidity of the spasms was indeed much lessened, and the general convulsions nearly gone; but the debility was extreme; a complete hemiplegia had supervened; the eyes were fixed, and the

speech faltering and unintelligible. Intermitting the opium, which had relieved the pain, but brought on general paralysis, small doses of camphor were given in a liquid form, and gruel with a small quantity of wine to support the strength. For the next six days he seemed to revive; but on the night of the 1st of March, he was seized, during sleep, with a convulsion as severe as ever: the jaws were more completely locked than before, deglutition was become impossible, and the pain under the ensiform cartilage was so extreme as to force from the patient the most piercing cries. At this time the effects of the quicksilver ointment were apparent in the fœtor of the breath, and in a considerable salivation.

"All other remedies being in vain, it was now resolved to try the cold bath. Gardner was, therefore, carried to the public salt-water bath, then of the temperature of 36° Fahr., and thrown headlong into it. The good effects were instantaneous. As he rose from the first plunge, and lay struggling on the surface of the water, supported by two of his fellow-soldiers, we observed that he stretched out his left leg, which had been for some time retracted to the ham; but his head did not immediately recover the same freedom of motion, and therefore he was plunged down and raised to the surface successively for upwards of a minute longer, the muscles of the neck relaxing more and more after every plunge. When taken out we felt some alarm; a general tremor was the only indication of life; the pulse and the respiration being nearly, if not entirely, suspended. Warm blankets had, however, been prepared, and a general friction was diligently employed. The respiration and the pulse became regular, the vital heat returned, the muscles continued free of constriction, and the patient fell into a quiet and profound sleep. In this he continued upwards of two hours, and when he awaked, to the astonishment of every one, he got up and walked across the room, complaining of nothing but hunger and debility. The convulsive hiccup indeed returned, but in a slight degree, and gave way to the use of the cold bath; which he continued daily a fortnight longer; and in less than a month, we had the satisfaction of seeing our patient under arms, able for the service of his country.

"That the opium, though it failed in effecting a cure, had a considerable influence in mitigating the disease, and prolonging life, is, I think, apparent.* That the mercury had little effect, is clear from the second convulsions coming on so soon after the salivation appeared.

* The effect of the opium was temporary; as soon as the system ceased to be under its influence, the convulsions returned with redoubled violence.

“Subsequent experience has taught me to attribute some part of the suddenness of the benefit obtained in this instance to a circumstance that distressed me much at the moment. The very instant we were about to immerge poor Gardner, he was seized with a general convulsion. We hesitated, but kept our purpose, and happily plunged him into the water with the convulsion upon him. I am also inclined to think that our success is in part to be ascribed to the powerful, general, and sudden application of the remedy, and under this opinion I should prefer immersion in water to its affusion.”

Here follows another case of a poor woman seized with spasmus cynicus, locked jaw, and other symptoms of tetanus. She was cured by the cold bath. The spasms returned in a slight degree after the first, but gave way entirely to a second immersion.

“In the convulsions of children I have found the cold bath a useful remedy, whether the disorder originated in worms or other causes. I have seldom known it to fail in stopping the paroxysms, at least, for some time, and thereby giving an opportunity of employing the means fitted to remove the particular irritation.”

Concluding Remarks.—“It appears that the efficacy of the cold bath in convulsive disorders is much promoted by being employed during the presence of convulsion. In spasmodic diseases which do not rise to general convulsion, the cold bath seems to be of inferior efficacy. In Chorea Sancti Viti, I have tried it frequently, but never found it of any service. In the hysteric paroxysm, the cold bath, or indeed the plentiful affusion of cold water, is an infallible remedy.”

It was *in the beginning* both of the typhus and of the yellow fever that Dr. Currie found “the cold bath produced the happiest effects, a diminished frequency of the pulse, a diminished heat of the body, and a flow of sensible perspiration.—The history, indeed, of all fevers, of every country, uniformly points out the salutary consequence of early and profuse sweating, of which, even the epidemic which prevailed between the fifteenth and sixteenth centuries, known under the name of sudor Anglicus, or sweating sickness, is not an exception.”

JAS. WAINEWRIGHT, M.D.

An Enquiry into the Nature and Use of Baths, &c. &c.—5th ed. 1737.

Washing with cold water heats robust bodies, and refrigerates weak ones. Sanctorius, Aph. 1, § 2.

“Cold bathing is a specific in the rickets; hæmorrhages, whether from the nose, intestines, or uterus, are not only stopped by cold bathing, but their return is prevented.

“Bathing will always act the part of a diuretic, and plunging over the head in cold water, especially in sea water, will do more in the cure of melancholy madness, and particularly in that occasioned by the bite of a mad dog, than any other medicine. There is nothing more adapted to the cure of *frigidity*, when owing to a former excess of *venery*, than a cold bath.

“It will also contribute its share to the cure, both of a simple gonorrhœa, and *fluor albus*. 'Tis often successful in a palsy, and they who use it much are very little affected with the change of weather; and yet the abuse of bathing is very prejudicial; for Bath guides are generally of a pale and ghastly countenance, of a bloated habit of body, with ulcerated and swelled legs, which often ends in a dropsy.

“It is never safe for those to bathe who have weak or ulcerated bowels; nor can they, without danger of life, or swooning at least, who have a very weak pulse, enter into a cold bath.

“One that goes into a cold bath, if he plunge not himself over head, is subject to the headache. People are cheerful, brisk, and lively after bathing, because the perspirable matter is thrown off more plentifully, according to Sanctorius's observation (Aph. 17, § 7;) viz. melancholy is overcome by a free perspiration, and cheerfulness without an evident cause, proceeds from perspiration succeeding well.

“Cold bathing cures the itch, leprosy, and elephantiasis; it cures the palsy, melancholy, madness, and the bite of a mad dog; it helps the passage of gravel, and also helps cachectic, icteric, and hydropic people, before the distempers be too far advanced.

Of Wearing Flannel.—“By what fate so many of late fall in with an opinion of the advantage of wearing flannel I can't tell; but this I am well satisfied of, that it does hurt to two for one that receives benefit from it, and there is none to whom flannel is more prejudicial than those to whom it is generally prescribed, being weak, faint, or hectic people.

“A consumptive gentlewoman in Sheffield, by the advice of a

physician, putting on a flannel shift, though she was able very well to walk about the house, in two days' time was confined to her bed (from whence she never rose), without any other evident cause than wearing flannel.

"If what I have said be of force enough to persuade any to leave off wearing it, I would advise them to do it in a warm season, and at the same time, either make use of the cold bath, or the flesh-brush, which will prevent the inconveniences that would otherwise attend it.

"I was persuaded to wear flannel next my skin, above ten years ago, for a severe cough that I had got; by which, I think, I received some advantage, but after I had worn it a year or two, I found it very troublesome and prejudicial to my health; it made me so exceedingly tender, that I was not able to bear the least cold; and I found by the experiment of leaving it off, how much it disposed me to faintness, which I mightily suspected before, and, therefore, I attempted several times in vain to get quit of it, but could not, without some inconveniency greater than I was willing to bear, till about two years since, in a hot season, going into a cold bath, I left it off without any damage."

"*Of Drinking Water.*—Sanctorius (Aph. 67, § 3,) tells us, that drinking of water hinders insensible perspiration, but advances sensible. So that water drinking is proper in fevers, the ancients giving as much as the patients would drink, as also in all chronical distempers in which there is an effervescence of the humours, such as the gout, defluxions, headache, hysterical illness, falling sickness, dull sight, melancholy, bilious, hæmorrhages, and putrefactions of the mouth, as Sir John Floyer informs us. Our common spring water would perform many of the cures done by our mineral waters, could they be taken in the same quantity."

NICOLO CRESCENZO.

Ragionamenti intorno alla nuova Medicina dell' Acqua. 1727.

On the use of cold water given in large quantities, which is called a full course of water (*dieta aquea perfetta*). "It must be always given cold, and *without any food* for the space of seven or eight days, or a longer period. A tumbler full of water, or rather less, is to be administered every hour, or every hour and a half, according to the intensity of the disease, and the strength of the patient. Towards the latter end of the course it is to be gradually diminished, first to

a medium quantity, and at last to a small quantity. Of these two courses the author has before treated.

“ This full course of water in a large quantity is adapted for all violent and acute diseases, which run their course in a short time, speedily terminating in death; as in every species of ardent continued fever, of a malignant character, every internal inflammation, also in every internal abscess, in short, in every case accompanied with a high degree of fever. When the fever is violent and burning, producing, as it were, a combustion in the body, accompanied with a parched tongue, unextinguishable thirst, and high-coloured urine, the water should be administered the first time in a large dose, namely, four or more copious draughts or tumblerfulls, then we should desist, waiting for the sweat to break out, the patient being covered with a few bed clothes. Should this single dose of water be sufficient, we must guard against giving any during perspiration. But if the sweat should not break out in the course of three or four hours, the dose should be repeated every hour or hour and a half, the patient being slightly covered, and the room kept perfectly cool, and thus the disease may be carried off by urine.”

The author then recommends this full course of water in other diseases besides fevers, as in diabetes, cholera, bilious diarrhœa, nephritis, colic, erisipelas, apoplexy, and after parturition.

He says, “ when the fever has disappeared, and the appetite returned, the patient may be allowed to take food, at first, very cautiously, as the yolks of one or two soft-boiled eggs, drinking a single glass of water; on the second day this may be repeated twice; on the third day four eggs may be given, or five spoonfulls of bread boiled in water, and this to be daily gradually increased to the patient’s usual diet.

“ In other fevers of a milder character, the water is to be taken frequently, in a smaller quantity, and very cold or iced.” The treatment very much resembles that of Dr. Hancock, or Father Bernardo, from one of whom it was probably derived.

TODARO.

De Aqua Frigida.

“ Galen says, he has seen many cured of a severe pain in the stomach in a single day by drinking cold water. ‘ Velasius de Taranta. Novi, inquit, aliquas mulieres se sentientes habere hujusmodi ulcere in utero, lavabant ea cum aqua frigida, mundabant deinde, et pannis

lineis exsiccabant, et in matricem mittebant frequenter, atque iisdem sæpè mutatis, ac ipsa aqua per se sæpè ad integram curationem sufficiebant.' Riverius says, that hernia, accompanied with inflammation of the intestines, may be cured by fomentations, or linen dipped in cold water. Celsus informs us, that a slight cut or wound may be cured by applying sponges squeezed out of cold water; but that, in whatever way the sponge may be applied, it is only of benefit as long as it retains the moisture. Galen also informs us, that he has cured many cases of burning continued fever, by giving his patients nothing but cold water to drink, and that not one of his patients died who had recourse to this simple remedy (*tempore opportuno*) sufficiently early.

"A nun had a painful tumour on the instep, which had resisted every remedy for three years, and was cured by applying snow and cold water. Another, suffering from vertigo and (*obstructione in lienis*) an obstinate constipation, was cured by drinking cold water, and applying a *linen dipped or moistened with cold water to the region of the spleen*, or over the stomach.

"Ducissa Cruyllas imminentem abortum cum atroci lumborum dolore, et pondere circa pubem, necnon icterica facta suæ gestationis tempore timebat; et solo aquæ frigidæ usu, *nivi etiam partibus apposite*, ab hac imminenta liberam se vidit ruina. Et rursum mense Martii, 1722, eum parere non posset; *frigida epota, et nive in manu habita*, statim peperit omnium cum stupore."

Dr. MADDOCKS observes, that the affusion of cold water acts upon the nervous system. "Duplex corporis habitus est," he says, "unde duplex quoque morborum genus nascitur;" alluding to those diseases which appertain to the nervous system, and those which belong to the humoral pathology, or the condition of the fluids; in either kind the water treatment is equally beneficial.

The poet THOMSON thus describes the bracing effects of cold:—

"Close crowds the shining atmosphere, and binds
Our strengthened bodies in its cold embrace
Constringent; feeds and animates our blood;
Refines our spirits, through the new-strung nerves,
In swifter sallies, darting to the brain,
Where sits the soul, intense, collected, cool,
Bright as the skies, and as the season keen."—*Winter*, line 697.

DR. SIMPSON.

Observations on Cold Bathing.

This author states, that "Nature forbids a sudden transition from heat to cold. Delicate people ought to accustom themselves to cold bathing by degrees. They should begin with a temperate bath, and gradually use it cooler, till at length the coldest proves quite agreeable. He advises his patients not to go into the cold bath when the body is chilly. In order to promote the reaction, it is necessary that as much exercise should be taken as will excite a gentle glow all over the body, but by no means so as to overheat it. The most proper time for using the cold bath is the morning, or immediately before dinner. The best mode is that of immersion head foremost. The frequency of bathing, and the time of continuing in the water, can only be determined by the nature and symptoms of the disease. To bathe three or four times a week will in general be found sufficient. Patients much debilitated should not bathe frequently, and they should remain in the water but a single moment. *All the beneficial purposes of cold bathing are answered by one single immersion, and the patient should be rubbed dry the moment he comes out of the water, and continue to take exercise for some time after.* Although every precaution be observed, many weakly people are chilled and made worse by cold bathing; but in such cases I have found a small quantity of wine, or thirty or forty drops of spirits of lavender, taken upon a piece of sugar immediately after coming out of the water, of the greatest service." *

DR. SHORT.

On the inward use of Cold Water.

"Whenever water is ordered as a relaxer of the fibres, it should be drank warm, as in pleurisies, squincies, and other inflammations; but when it is designed for a restringent, as in fluxes of the belly,

* These observations are all very judicious, excepting the first. The sudden transition from heat to cold is the most effectual in producing reaction and in cutting short an acute disease; for the same reason, it also requires the greatest caution in its application.

hæmorrhages, &c. it should be used cold. In this case I had occasion to experience its wonderful effects, in two or three of the female sex, who, having for many months laboured under an excessive flux of the menstrea, without the least advantage from the medicines used, yet, by refraining from all other liquors, and drinking water cold, they were speedily recovered; but what was more remarkable, when at some certain times the loss of blood was greatest, yet by drinking a glass of very cold water, and at the same time *applying a thick cloth dipped in water to the lower part of the umbilical region*, the flux was stopped in a quarter of an hour."

CÆLIUS AURELIANUS recommends "in *Paralysis*, sea-bathing and to put the patients under waterfalls, or the natural douche; afterwards to expose the body to the sun. In *Epilepsy*, the douche or dashing cold water over the body. In *Aphonia*, sponges dipped in cold water to be applied to the throat and fauces. In *Catarrh*, change of air, especially the sea-side, and to wash the head with cold water. In the *Ear-ache*, a stream of cold water, or dashing it on the whole of the head, especially near the ears. In *Asthma*, a stream of cold water on the suffering parts, sea-baths, sea-side, constant use of the cold bath. *Dyspepsia*, constant use of the cold bath, swimming in the sea, a stream of water or douche on the suffering parts. *Elephantiasis*, the douche, sea bath, cold spring-water bath, swimming. *Colic*, the douche bath. *Coma*, cold applications to the head, cold water poured from above, cold bath, cold affusion and friction. *Typhus Fever*.—The sick chamber to be kept cool, dark, well ventilated with fans, sprinkling the floor with cold water; the face and neck of the patient to be covered all over with soft sponges dipped in cold water, to be removed from time to time. Then the chest and other parts to be sponged, squeezing out the cold water, or vinegar and water, constantly changing them, lest they should become warm. In like manner, linen cloths dipped in the juices of plantain, houseleek, and other cooling plants, are to be placed over the chest and abdomen. The drink to be cold, and given little by little. The mouth to be wiped and washed out with cold water. The food very simple; bread soaked and washed in cold water, or the pulp of boiled apples, pears, quinces, medlars, mixed with cool fresh water, or melted snow. This author, in every part of his work,

recommends the use of cold water ; and the treatment in typhus is, perhaps, as good as any adopted in the present day. He gives an excellent description of spasmodic or Asiatic cholera, which is treated in a similar way, sponging and washing the body with cold water, and cold water to drink."

ORIBASIVS says, those who wish to pass their lives in good health, should frequently wash themselves with cold water. Language is not sufficient to express the great and numerous advantages to be derived from it. Those who are accustomed to such ablutions retain, notwithstanding they have nearly arrived at old age, a fresh colour, a body firm and tense, and all the vigour of manhood.

Cox's "*Columbia River*."

"I experienced some acute rheumatic attacks in the shoulders and knees, from which I suffered much annoyance. An old Indian proposed to relieve me, provided I consented to follow the mode of cure practised by him in similar cases on the young warriors of his tribe. On inquiring the method he intended to pursue, he replied, that it merely consisted in getting up early every morning for some weeks, and plunging into the river, and to leave the rest to him. This was a most chilling proposition, for the river was firmly frozen, and an opening was to be made in the ice preparatory to each immersion. I asked him, 'Would it not answer equally well to have the water brought to my bed-room?' But he shook his head, and replied, he was surprised that a young white chief, who ought to be wise, should ask so foolish a question. On reflecting, however, that the rheumatism was a stranger among Indians, while numbers of our people were martyrs to it, and, above all, that I was upwards of three thousand miles from any professional assistance, I determined to adopt the disagreeable expedient, and commenced operations the following morning. The Indian first broke a hole in the ice sufficiently large to admit us both, upon which he made a signal that all was ready. Enveloped in a large buffalo robe, I proceeded to the spot, and throwing off my covering, we both jumped into the frigid orifice together. He immediately commenced rubbing my shoulders, back,

and loins ; my hair, in the meantime, became ornamented with icicles ; and, while the lower joints were undergoing their friction, my face, neck, and shoulders were incased in a thin covering of ice. On getting released I rolled a blanket about me, and ran back to the bed-room, in which I had previously ordered a good fire, and in a few minutes I experienced a warm glow all over my body. Chilling and disagreeable as these matinal ablutions were, yet, as I found them so beneficial, I continued them for twenty-five days, at the expiration of which my physician was pleased to say, that no more were necessary, and that I had done my duty like a wise man. *I was never after troubled with a rheumatic pain !* One of our old Canadians, who had been labouring many years under a chronic rheumatism, asked the Indian if he could cure him in the same manner ? the latter replied, it was impossible, but that he would try another process. He accordingly constructed the skeleton of a hut about four and a half feet high, and three broad, in shape like a beehive, which he covered with deer-skins. He then heated some stones in an adjoining fire, and having placed the patient inside in a state of nudity, the hot stones were thrown in, and water poured on them ; the entrance was then quickly closed, and the man kept in for some time, until he begged to be released, alleging that he was nearly suffocated. On coming out he was in a state of profuse perspiration. The Indian ordered him to be immediately enveloped in blankets and conveyed to bed. This operation was repeated several times ; and although it did not effect a radical cure, the violence of the pains was so far abated, as to permit the patient to follow his ordinary business, and to enjoy his sleep in comparative ease."

As a further proof of the advantage of combining the cold water treatment with medical practice, the author begs to offer the very respectable testimony of Dr. Abendroth, one of the leading physicians at Dresden, who favoured him with the following letter on the subject :—

" MY DEAR SIR,

" *Dresden, 21st January, 1843.*

" In answer to your question, whether I make use of cold water in my medical practice, I can tell you that I consider it a valuable adjunct to medicine in the cure of a great many diseases, and that

I have soused it for many years with undoubted success. It is true that I could never prevail on myself to use the application of cold water to such an extent as it is done now at Graefenberg, being well aware of the danger which arises from the abuse of even the best thing in the world. My mode of using cold water has been generally confined to cold drinking, washing, and applying cold wet compresses. As the want of leisure does not allow me to look over all my medical journals, in order to give you more instances of the salutary effects of cold water, I can only give you the following, which occur to my memory :—

“ During my residence in Odessa, I was called to see a poor man, who, in cutting wood, had missed the log, and forced the hatchet between the *ossa metacarpi* of the great and second toe of his foot, so that the latter was separated from the first, and the *arteria metatarsi* cut through. The loss of blood was so considerable, that it threatened the life of the patient. I put a bandage with some compresses round the foot, covered it all with ice, and continued it so for twenty-four hours ; after which time, I only exposed the foot to a constant stream of cold water, distilling from a pail, suspended over the injured limb. The patient had remained so for a week, when I took off the bandage, and found the wound almost healed up, *per primam intentionem*. The poor man went on for another week, putting round his foot wet compresses and bandages, which he changed several times a day, and was able to go to work again on the fourteenth day after the accident, without having used anything else but water.

“ A lady was very often subject to rheumatic pains in her shoulders, and the least exposure to cold air caused her a painful stiff neck. One day, when she was suffering, I covered her neck with cold wet napkins till the pain was gone. It ceased almost instantly, and never returned again, as the lady followed my advice, and continued washing her neck and shoulders daily with cold water.

“ Another lady, suffering from pneumonia, had taken a saline draught, with a small dose of nitre. A violent diarrhœa was the consequence of it. When I saw her the diarrhœa had lasted already for six days, and had weakened her so much that she lost all consciousness, and the evacuations passed from her involuntarily. Her tongue was brown and dry, the pulse weak, frequent, or small and thready, 120 in a minute. As *acetas plumbi* and *opium* had not the desired effect, I applied cold wet napkins upon the stomach, which seemed to give her great pain at first, but were borne after-

wards very well. The napkins produced an instant stopping of the diarrhœa, which continued for six hours, after which the patient felt herself considerably relieved ; and I can say that the convalescence began from that very moment. The symptoms of pneumonia, which had disappeared for the last three days, during the relaxed state of the bowels, never returned, and the patient was soon able to go about.

“This is all I can give you at the present moment. It proves that water is an excellent adjuvant in the treatment of disease, provided that the use of it is also combined with a corresponding diet, which is particularly to be recommended in chronic diseases. The report, that a Prussian general had been cured of gout by the ‘water-cure’ at Graefenberg, sawing and cutting, however, at the same time the whole stock of fire-wood of his landlord, and thus working and living abstemiously during the long space of four years, reminds me of an anecdote, imputed to Frederic, King of Prussia, who, on his walk through the public gardens at Berlin, met with a stout well-fed gentleman (one of his subjects), who complained to the king, whom he did not know, of the misery of his bad health, which made him spend half his fortune in constant travelling to watering places, without any relief. The king told him, that he would recommend him to an excellent physician at Spandau (the next station and fortress), who would undertake his cure for a trifle, and that he would answer for the success. The gentleman accepted this offer with great pleasure, and took a note from his kind adviser to Spandau, where, on delivering it, he was by mistake, as he thought, taken into the fortress, and obliged to work hard with a very scanty food. He complained bitterly of this mistake, wrote to Berlin to his friends, but had no answer till, six months after his arrival at the fortress, the king came himself to inspect the prisoners, and was very glad to see his patient in perfect health, but reduced to a shadow of what he had been before. He congratulated him on the recovery of his health at such a cheap price, and sent him home cured for ever. I think this is an application of the advice Mr. Abernethy gave to one of his patients, afflicted with gout : ‘Live upon sixpence a-day, and work for it.’

“ Yours, very sincerely,

“ W. ABENDROTH, M.D.”

“ To DR. GRAHAM, Hôtel de Rome.”

The late Dr. GREGORY used to relate a similar anecdote to that of the King of Prussia and his gouty subject. A Spanish friar, cor-

pulent, and a martyr to the gout, was carried off by the Algerine corsairs, who compelled him to tug at the oar, as a galley-slave. He remained in captivity during three years ; at the expiration of which time he was ransomed. Hard work and a spare diet had not only produced a thorough change in his personal appearance, but radically cured him of his disease, which, as he continued to live abstemiously, never afterwards returned. Instances of this kind might be multiplied indefinitely, proving beyond a doubt that exercise and abstemiousness are the only certain cure. On this principle, hydropathic institutions are well calculated to restore the patient ; but he should not imbibe the idea that the cure is effected merely by water, the dietetic rules to be observed are fully equivalent to the water treatment, and it is by them, and them alone, that health can ever be perfectly re-established and maintained. For there is a wide difference between relieving a fit of gout, or removing a rheumatic pain, and restoring the body to that healthy condition in which it was previous to the first invasion of disease ; it is neither water nor physic that can accomplish so great a task, but only the most implicit obedience to the laws of nature,—those laws which govern the organization of the body, and which were never yet transgressed with impunity.

Naturam disce sequi.

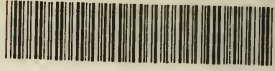
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